

INFO WORLD

The Voice of Enterprise Computing

ENTERPRISE COMPUTING GOING PORTABLE

Portability has its price. As notebooks get smaller and faster, **IT managers need to weigh both the upfront and hidden costs of supporting notebook users** against the greater flexibility and productivity that notebooks provide. **And they should stay tuned: The situation is improving.** Developments in notebook technology and standards may make tomorrow's portable **an even more attractive replacement for desktop systems.**

See page 93.

Lights, camera, Java

■ Intel media framework takes shape

By Niall McKay
AS PART OF AN effort to position Intel processors as a major platform for Java applications, Intel has begun licensing a Media Framework for Java to independent software vendors that includes JavaBeans components for video, 3-D surround sound, and animation.
Called the Intel Simple Video Bean for Java, the Intel Spatial Audio for Java, and the Intel Animation for Java, the products are part of the microprocessor giant's Java-development operation.
"We were one of the first licensees of Sun's Java specification in 1995," said Barbara Dawson, di-

rector of software strategies for Intel's desktop division. "We develop Java technology; optimize it for the Intel platform, and then either give that technology to JavaSoft or to one of the many Java ISVs working on the Intel platform."
Other software technologies under development at the company's Oregon facility include a Java virtual machine, a just-in-time compiler, and some dynamic compilation technology. Intel officials say it is complementary to Sun's HotSpot compiler technology due in the so-called Version 2.0 of the Java Development Kit. The HotSpot compiler.

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Pentium crashes: Brett Glass explains what causes the Pentium 'FO' bug and what you can do. 42

Management turkeys: A boss says a reader who reduced help desk calls is unproductive. 96



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Windows wobbles forward

NT 5.0 swings, misses

Win98 set to pinch hit

By Ephraim Schwartz

IT DEPARTMENTS managing Windows NT 4.0-based notebooks that want to move to 5.0 are in for a rude awakening as the news from Redmond spreads that the upgrade will disable power management, socket services, and plug-and-play features in today's NT 4.0 notebook systems.

Because system vendors have developed their own

► **NT 5.0** page 24

By Bob Trott

THE RELEASE DATE for Windows NT 5.0 may be slipping further into the future, but in the meantime Microsoft is juking up Windows 98 to improve management and deployment of the OS.

Except for a demonstration running Microsoft Chairman Bill Gates' keynote speech, Beta 1 of Windows NT 5.0 kept a very low profile at Comdex in Las Vegas last

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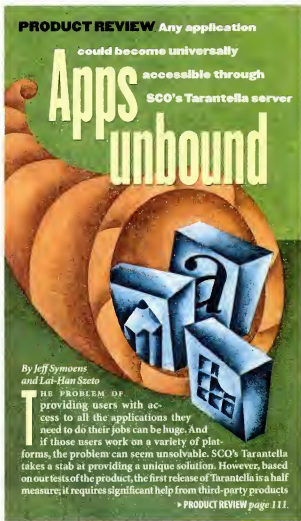
PRODUCT REVIEW Any application

could become universally

accessible through

SCO's Tarantella server

Apps unbound



By Jeff Symoens and Lai-Han Szeto

THE PROBLEM OF providing users with access to all the applications they need to do their jobs can be huge. And if those users work on a variety of platforms, the problem can seem unsolvable. SCO's Tarantella takes a stab at providing a unique solution. However, based on our tests of the product, the first release of Tarantella is a half measure; it requires significant help from third-party products

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Network interfaces

3Com, Intel add brains to network links

By Stephen Lawson

NETWORKING RIVALS Intel and 3Com are planning to add new levels of systems and network-management intelligence to their network interface cards and LAN-on-motherboard connections.

PCs with smarter network links, which can monitor their own status and control their own behavior in the network, could dramatically simplify remote system and network management, as well as reduce the cost of PC networks.

Intel will bolster its single-chip LAN interface in 1998 with Intel AlertPack, a combination of hardware and software that will allow systems to notify a network-management console if there is a failure. The AlertPack software, set to ship in April, will notify the Intel LAN-Desk Configuration Manager of a system crash, failure to boot, or hardware failure, and will be able to send recurring packets to signal its presence.

With the addition of an optional

► **LINKS** page 24



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Thin clients

Intel aims low and lean with latest offerings

By Terho Uimonen and Torsten Busse

INTEL BEFORE YEAR's end will announce and endorse two different thin-client architecture designs that will allow the corporate desktop to hit the sub-\$1,000 price range, a senior official said last week.

Intel's plans will heat up the battle over the pocketbooks of corporate buyers, who are already faced with a bewildering array of thin clients.

Targeting the very low end of the market, Intel will introduce a design for what it calls "lean clients," which could carry a price tag of just less than \$500, said Paul Otellini, executive vice president and director of sales and marketing at Intel, at fall Comdex in Las Vegas last week.

A slightly more expensive client will be designed for running Windows NT, but will differ from Microsoft's Windows-based terminal concept, Otellini added.

Intel's endorsement of such new thin clients is the chip giant's latest move in an industry-wide drive toward reducing the cost of buying and owning computers.

Although concepts such as the network-computer client, promoted by database vendor Oracle's Chairman and CEO Larry Ellison, recently seem to have been languishing, the idea of reducing the total cost of ownership has not.

Central to the concept is a greater reliance on the network, with remote manageability rapidly gaining acceptance as a standard feature in client PCs. And that is exactly why Intel has nothing against any kind of networked clients, Otellini said.

"All servers are going to be Intel-based," said Otellini, noting the much higher prices that Intel can charge its customers for high-end processors for servers.

Otetlini declined to reveal what Intel processors the new client designs will feature, but one source close to the company said that 200-MHz Pentium-class of processors are the lowest Intel will go.

Several of the world's largest PC and software vendors are likely to adopt the Intel designs, the same source said.

Intel, however, is not the only chip vendor trying to reduce the price

point for the corporate desktop.

With sub-\$1,000-priced PCs powered by Cyrix's MediaGX processor are already taking the retail PC home market by storm, the chip vendor is now setting its sights on the corporate market.

"It's naive to think the same is not going to happen in the corporate market," said Stan Sverengren, senior director of mid-range products, at Cyrix. "The corporate market is usually a year behind the retail market."

As a result of the shifting strategies of the chip makers, corporate buyers in 1998 could end up choosing between a PC powered by a Cyrix chip, offered at the same price point as a "lean client" based on an Intel design featuring a Pentium processor.

Intel Corp., in Santa Clara, Calif., is at <http://www.intel.com>.

Terho Uimonen and Torsten Busse are correspondents for the IDG News Service, an InfoWorld affiliate. (Rob Guth of the IDG News Service also contributed to this story.)

FROM THE NEWS DESK • MICHAEL VIZARD

Your network future could be in the cards

In the drive to gain some control over the total cost of PC ownership, the lowly network interface card (NIC) may hold the key. As noted in this week's page one article by Stephen Lawson, both Intel and 3Com are working on robust next-

generation cards that will allow customers to run more intelligent networking software on a PC card.

These technologies are critical developments in the struggle both to hold down costs and to improve network performance.

The cost-cutting value of these new NICs is obvious. They will provide a portal through which network management software can finally manage your PC across a WAN.

Although we've seen a lot of

advances in this space over the past two years, a new class of cards will really make these devices intelligent by delivering more management software at the point of the problem.

Just as appealing is the prospect of adding software that will help improve performance by developing tools that can analyze network traffic as it passes over the network card. These tools could then be used to prioritize traffic, allocate

bandwidth, and maybe even bill for actual network usage. Imagine a world where you could use policy-management software to charge people for sending you spam.

So, although most people will be talking about how Intel is going to trounce 3Com in the NIC business, it's important to note that this type of competition does indeed spur innovation. In fact, both these companies have a very clear understanding of what really needs to be done in this space, so it is highly unlikely that either vendor will completely dominate.

Although it is true that Intel enjoys an edge over 3Com in terms of brute manufacturing force, 3Com has more networking experience that is likely to result in higher-value products over the long haul.

So how does it look from where you stand? Are NICs the missing piece in the total-cost-of-ownership puzzle? Or are they just another low-cost complication in a growing network maze?

Write to me at michael_vizard@infoworld.com.



NEWSBRIEFS

■ SQL Server 6.5 and Oracle 8.0.4 on way

Microsoft and Oracle in December will ship incremental releases of their databases. Microsoft will release SQL Server 6.5 Enterprise Edition, featuring support for Microsoft Clustering Server software, for system fail-over. Oracle will ship Oracle 8.0.4, which features production code for supporting the Java Database Connectivity and JSQL standards, for database access from Java applets. In addition, Microsoft, as a follow-up to next year's planned SQL Server 7.0 release, is working on a version of the database code named "Shiloh." It will support shared-nothing computing architectures for improved scalability. Other features include language-independent stored procedures and improved support for abstract data types.

■ Microsoft COM+ timetable delayed

Microsoft has revised its timetable for COM+, the promised extension to the Component Object Model (COM). The first beta release of COM+ will ship with the second beta release of Windows NT 5.0 in the first half of 1998, according to Paul Gross, vice president of Microsoft's developer tools division. Two months ago, at the Professional Developers Conference, Microsoft was talking about delivering the COM+ beta product by the end of 1997. Microsoft hopes to ship the final version of COM+ soon after the final release of NT 5.0, Gross said, but it's unclear when NT 5.0 will ship. COM+ will seek to improve COM with interceptors, which will allow a component to redirect requests from a service to any other service.

■ Microsoft plugs one more IE hole

Microsoft on Friday made available a fix for Internet Explorer 3.02 and 4.0 that addresses a so-called "page redirect" bug on Windows 95 and Windows NT 4.0 machines. The security flaw allows malicious Web authors to capture a user's name and password when the user is redirected to the site from another site that requires user authentication, a Microsoft official said. Explorer 4.0 has been hit with a handful of bugs since it was released almost two months ago. Microsoft plans to issue a 4.0x version of Explorer in the near future to update the browser with all the fixes, according to Yusuf Mehdi, group product manager for the Internet platform and tools division.

■ Gerstner agrees to five more years

Louis Gerstner has agreed to stay at IBM as chairman and chief executive officer for another five years, IBM announced Friday. Gerstner, hired five years ago to turn around the ailing company, said that his job was not yet done. Despite the rise in value, IBM is not on thoroughly sound footings, with revenues flat in its hardware business and recently announced layoffs in its North American division. Furthermore, other divisions worldwide are offering voluntary buyouts. IBM's board also granted Gerstner additional stock options.

■ LG Semicon ships picoJava chips

LG Semicon next month will begin shipping picoJava-based processors for network computers, Internet televisions, set-top boxes, and consumer kiosks. The MJ1 processors will first be supplied exclusively to Sun Microsystems but will be available on the open market next year. With a picoJava core, the MJ1 integrates a graphics engine, keyboard and mouse interface, modem port, and PCI bus controller. The 32-bit CPU operates at 66 MHz. The follow-up MJ2 processor, which will gain better performance with 133- to 200-MHz clock speeds, is scheduled for production in the third quarter of next year.



For the latest IS news and updates, turn to InfoWorld Electric at <http://www.infoworld.com>.



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THE INFOWORLD SCOOP

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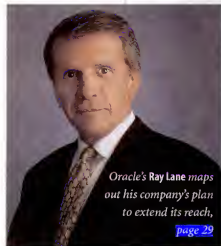
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Oracle's Ray Lane maps out his company's plan to extend its reach, page 29



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Processor futures

Cyrix to challenge Merced

By Andy Stanton

AS INTEL HAS BEEN dribbling out information about its next-generation Merced processor and Advanced Micro Devices (AMD) is trumpeting the K7 chip it is planning, Cyrix has quietly begun work on its own next-generation processor, the M3.

Like Merced, the M3 is expected in 1999 and will offer enhancements over Cyrix's current 6x86MX, designed under the code name M2. For example, it will have larger caches to improve performance and an enhanced floating-point unit to improve graphics capabilities.

Although AMD will switch to the

Alpha processor bus for its K7, in order to get around Intel's patents on the Pentium II interface, Cyrix believes it can use the Intel bus through a long-standing cross-license agreement between Intel and National Semiconductor, Cyrix's new corporate parent, said Steve Tobak, marketing vice president at Cyrix. But Cyrix is still studying the choice of CPU bus and may even choose a proprietary solution, as it did with its MediaGX chip, he added.

One observer suggested that Intel's competitors work together on an interface to avoid offering incompatible, and therefore more costly, designs. Such standardiza-

tion will help Intel's competitors, said the executive, who asked not to be named.

"If chaos reigns, Intel wins," the executive said.

Attacking Intel from the system side, National Semiconductor last week unveiled a Managed PC reference design that aims to help OEMs bring sub-\$1,500 networked PC products to market more quickly. National's reference design complies with the Network PC System Design Guideline—specifications gathered by Intel, Microsoft, and others.

"This plays into 3Com's push to expand past [network interface] cards," said Lee Schugar, an industry analyst at Dataquest, in San Jose, Calif.

Cyrix Corp., in Richardson, Texas, is at (972) 968-8388. National Semiconductor Corp., in Santa Clara, Calif., is at (800) 272-9999.

IBM, NEC, and Sony to offer slender notebooks

By Dan Briody

THIS IS IN for notebooks next year as vendors, including IBM, NEC, and Sony, plan slimmer and smaller systems and components.

The Comdex trade show in Las Vegas gave vendors an opportunity to present next year's slimline models. IBM showed off a number of devices, the thinnest of which was a 160MB hard drive that was smaller and thinner than a PC Card. The hard drive can also hold as much as 320MB of data, according to Steve Ward, general manager of mobile computing at IBM.

IBM also showed off a .75-inch prototype notebook, as well as an e-mail-device concept that would weigh 2 pounds and run either the WinCE or Java OS.

Ward believes that though IBM has the technology to go thinner, notebooks need to be about 1-inch thick to be truly usable with enough hard disk space.

Sony and NEC are both considering leveraging technologies they



STEVE WARD:

Notebooks need to be about 1-inch thick to be truly usable with enough hard disk space.

are now using in Japan and introducing ultra-thin and mini-notebooks for sale in the United States.

NEC is considering releasing a mini-notebook designed to compete with the Libretto from Toshiba,

and showed off the Japanese Mobio NX, a product that runs a 120-MHz Pentium and Windows 95. Having recently introduced the fully functional, 1.5-inch Versa 5060 and the 1.5-pound MobilePro 700, NEC is evaluating the type of product that would fall in between.

Meanwhile, Sony displayed its Vaio PCG-505, an ultra-thin Japanese model measuring .95-inches thick and weighing 2.97 pounds. The system features a 133-MHz Pentium and 10.4-inch thin-film transistor display but only a 1GB hard drive.

IBM, in Armonk, N.Y., is at (800) 426-3333. Packard Bell NEC, in Sacramento, Calif., can be reached at (916) 388-0101 or <http://www.packardbell.com/>. Sony Information Technologies of America, in San Jose, Calif., can be reached at (800) 476-6972 or <http://www.sony.com/vpc>.

Laura Kujubu contributed to this article.

Novell bets the farm on NDS and Java strategy

Beta version of Moab is announced

By Dana Gardner and Emily Fitzloff

NOVELL HAS RELEASED a beta version of NetWare 5.0, known as Moab, but the company's future is as the premier supplier of Java net-



ERIC SCHMIDT:

By adding the ability to run Java... we can become a significant midtier server player.

works and directory-enabled services, said CEO Eric Schmidt at Comdex in Las Vegas last week.

"By adding the ability to run Java applications, we can become a significant midtier server player," Schmidt said. "[Java is] the language of electronic commerce, and it will replace C and C++."

During the next year, Novell will drive TCP/IP through its line of offerings and port key products—including BorderManager—into Windows NT Server and Unix platforms.

This beta version of NetWare 5.0, which is many months behind schedule, will be followed next month by a fuller second beta, Schmidt said.

A third beta version is due in early 1998, signaling a new policy for

Novell of sequentially delivering products rather than infrequent bursts. The final product is expected in mid-1998.

"This first Moab beta doesn't yet have all the features and services that will appear in the final product," said Michael Simpson, marketing director at Novell. "This beta is primarily for testing the native IP stuff."

NetWare 5.0's initial iteration includes a Java Virtual Machine and Java Software Developer's Kit so developers can use Novell as a construction platform.

Schmidt promised Comdex attendees that Java will run better on Novell than any other vendor's server. He said Novell will seek to create a universal container in its servers that, via Java and Internet Inter-ORB Protocol, coordinates the functions of disparate servers on one end and disparate clients on the other.

"The Java strategy is a good one for Novell, particularly since their prime competitor, Microsoft, obviously has a difficult time proving itself as a Java enthusiast," said Mike Hurwicz, an analyst at Patricia Seybold Group, in Boston. "However, they will pale when compared to Java on Netscape or Sun."

Novell is also steering servers to multiple platforms.

"The same capabilities in NDS [Novell Directory Services] for NT [due to ship in a couple of weeks] will be brought to NDS for Unix," Simpson said. "We want seamless user account management."

"It will be NDS against Microsoft directory service. Novell shouldn't be counted out," said Jim Abel, an analyst at Resume Software, in Austin, Texas.

Novell Inc., in Provo, Utah, is at <http://www.novell.com/>.

Improved Site Server eases order routing

By Matthew Nelson

MICROSOFT HAS announced that the next version of its Site Server, Enterprise Edition, will include a Commerce Interchange Pipeline to enable application-to-application interchange of business data objects.

The announcement was made at a Microsoft event last week with members of the Value Chain Initiative (VCI) consortium, including

Sterling Commerce, Harbinger, CrossRoute Software, and UPS Worldwide Logistics.

The Commerce Interchange Pipeline is based on Microsoft's Component Object Model (COM), said Jonathan Weinstein, lead product manager for Site Server commerce marketing at Microsoft.

"It provides a simple COM-based interface to developers and is transport-independent, which means

depending how you want to move these objects we will support multiple transports including HTTP [Distributed COM], [Secure MIME] over SMTP, and we will support something called Microsoft Message Queue in the future," Weinstein said. "Commerce Interchange Pipeline will provide a simple means for routing orders to a distribution center, to systems within an enterprise, or to trading

partners."

"This is clearly an important underlying technology for enabling supply-chain application in business-to-business commerce," Weinstein added.

However, analysts are not convinced that the new feature will drive Site Server adoption as a platform for Internet commerce.

"Right now Microsoft is not strong in e-commerce, and this won't bear fruit until mid-1998 at the earliest," Vernon Keenan said, senior analyst at Zena Research, in Redwood City, Calif. "But it's im-

portant for buyers in the software industry to pay attention to Commerce Interchange Pipeline and VCI as it could be important in 1998."

"The feedback I'm getting from users is that NT offers a lot of transaction features, but it's not ready yet," agreed Chris Stevens, senior analyst at the Aberdeen Group, in Boston. "I would be willing to say that the value-chain initiative is a long-term initiative."

Microsoft Corp., in Redmond, Wash., is at <http://www.microsoft.com>.

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† Notebook with Windows 3.1x or Windows 95, speaker, microphone and sound capabilities required. Spectrum Connected, Inc. is a trademark of Spectrum Information Technologies.
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Microsoft focuses on next version of its Hydra server

By Bob Trotter

THE FIRST Beta version of Windows-based Terminal Server, the multitier technology code-named Hydra, is out the door, but Microsoft is already looking to the next version to shore up some weak spots.

Windows-based Terminal Server for NT 4.0 will not support Microsoft's clustering technology, according to John Frederiksen, Hydra group product manager. Clustering support will be included in Hydra's next version, which will be geared for Windows NT 5.0, he said.

Users looking for load-balancing functionality could get it from Picasso, a mixed-client Windows NT application server from Citrix that is being billed as an extension to Hydra.

But although Picasso, also in its first beta cycle, will let administrators tie multiple servers together, it will not include fail-over capabilities, said Dave Weiss, director of product management at Hydra.

Both products are due to ship in mid-1998. Pricing has not been set; Windows-based Terminal Server's per-client license scheme will be consistent with other Windows licenses, Frederiksen said.

Microsoft hopes enterprises will use Hydra, an answer to the Java-fueled network computer, to run applications off the server onto any machine, from 16-bit PCs to Windows-based terminals to Wyse Technology, Tektronix, and other manufacturers.

Hydra and Picasso use the Citrix Independent Computing Architecture and Microsoft T-Share protocols to communicate to clients loaded with a small client piece of code.

Even though the first beta version was delivered only last week at Comdex, Microsoft is already working on the next version, Windows-based Terminal Server for NT 5.0, which has slipped from its planned release date of the first half of 1998. (See "Microsoft's Hydra tries to head off NCS," Nov. 17, page 1.)

That release will include support for clustering, the Active Directory, and the Microsoft Management Console, Frederiksen said.

Microsoft promises new features to the server will not affect the size

Hydra for NT 5.0

The next version of Windows-based Terminal Server will add support for key technologies.

Active Directory
Microsoft Cluster Server
Microsoft Management Console

of the footprint on the local client; this is a key distinction from NCS, which has a browser on the client.

"We can grow and still remain the same," Frederiksen said. "The best thing client is one that does no local processing."

Microsoft Corp., in Redmond, Wash., is at <http://www.microsoft.com>. Citrix Systems, in Fort Lauderdale, Fla., can be reached at <http://www.citrix.com/>.

Network computers

NC momentum loses steam, gains doubt

By Dan Briody

IF THE CURRENT trend continues, NC will stand for "not coming" rather than network computer.

Following the recent shot-in-the-arm announcement that major NC vendors plan to define compatibility standards, doubt was cast on the NC concept last week at Comdex when Wyse Technology announced that it would avoid building NCs altogether, and Sun revealed another delay in the shipping of its JavaStation NC. (See "IBM leads push for NC standard," Nov. 17, page 6.)

"The NC has been mostly rhetoric, a lot of \$500 promises," said Jeff McNaught, general manager at Wyse and an NC supporter in the past. "We've come to the conclusion that this can't be done."

Instead, Wyse has begun work on a new product category, the Java

Network Terminal (JNT). The idea behind the JNT is to move more of the computing power and Java elements to the server, whittling down the client's footprint and reducing the cost to less than \$1,000. It will provide Windows access and local boot capability, officials said.

The Wyse Winter 4010 series of JNTs should be available by the spring of 1998, according to McNaught.

Bob Gilbertson, president and CEO of Network Computing Devices, in Mountain View, Calif., said he thinks a decision to pull back from NCs, such as the one Wyse made, may have been influenced by the industry's most powerful player.

"Because of the violent attack of the NC consortium, [Microsoft chairman Bill] Gates doesn't like the word NC," Gilbertson said. "If

you were to declare you were an NC company and you want to be in the Windows space, you would have trouble doing business with Microsoft."

Meanwhile, Sun announced that its JavaStation NC, originally scheduled for release by this fall, will not ship until 1998.

In addition to its JNT efforts, Wyse is lobbying Sun to help develop a smaller Java Virtual Machine for thin clients and will try to convince IBM to buy into the product category. But IBM still supports the NC concept and sees no need for radical change, said Phil Hester, vice president of development for network computing at IBM.

Wyse Technology Inc., in San Jose, Calif., is at (800) 438-9973. Sun Microsystems Inc., in Palo Alto, Calif., is at (800) 681-8845.

Three eight-way server design camps emerge

By David Pendery

WITH A SLEW of eight-way servers released recently and others right around the corner, the stakes are high for the company that establishes an eight-processor, Intel-based architecture standard.

Three designs are currently vying for supremacy in today's hot eight-way market: Intel/Corollary's Profusion, based on Intel's future Deschutes chip; and NCR's OctaScale and Axil Computer's eight-way architecture, both based on the current Pentium Pro processor.

As might be expected, some analysts believe Intel's dominance makes Profusion destined to become the eight-way standard.

"I think it will become the de facto standard," said Jerry Sheridan, principal analyst at Dataquest, in San Jose, Calif.

Supporting such a theory, computer giant IBM said last week that it will base its eight-way product

plans on the Profusion design release—currently slated for the second half of 1998.

"We've decided to wait for [Profusion]," said Lineene Krasnow, vice president of marketing for Netfinity servers at IBM, in Somers, N.Y.

Compaq also has sided with Profusion—not a surprising move considering that the design will rely on some Compaq technologies, such as its Hot Plug PCI specification.

But the fact that the Profusion design will not appear until late 1998 has prompted some companies to adopt other architectures.

Axil found a supporter in Data General, which shipped its Eighty AV 8600 last week.

NCR is forging its own path with its OctaScale design, built into the company's WorldMark 4380 server, which was also released last week.

Russ Pine, manager of network and telecommunications at H&R Block, in Kansas City, Mo., said he chose NCR's WorldMark 4300—

► Sources say Hewlett-Packard will include the Axil design in its eight-way server, to be announced on Dec. 2.

the four-way server on which the 4380 is based—so he could upgrade to an eight-way when the time is right.

Both Digital and Sequent Computer System have licensed NCR's OctaScale architecture.

However, not everyone is excited about the current buzz about eight-way machines.

"Four-way is the most optimal for ... NT right now," said Peter Lowber, principal analyst at Data-Pro, in Delran, N.J. "[Eight-way] really doesn't buy you that much."

Intel Corp., in Santa Clara, Calif., is at (408) 765-8080. NCR Corp., in Dayton, Ohio, is at (937) 445-5000. Axil Computer Inc., in Concord, Mass., is at (978) 371-8100.

IBM's channel assembly cuts the cost of PCs

CHANNEL ASSEMBLY took a large step forward last week when IBM announced that it has shipped its first channel-assembled ThinkPad and brought some PC prices below \$1,000.

Part of Big Blue's Authorized Assembler Program (AAP), ThinkPad 770s will be configured and delivered by IBM's business partners in the channel. However, some customers have concerns.

"Getting things faster and cheaper, in theory, is always nice," said one IT manager of a Fortune 500 company. "But we generally feel better when the machine comes from the manufacturer, especially in the case of IBM."

In addition to lowering the cost of the ThinkPads, IBM credits the AAP program for enabling the company to get the price of its PC300G to less than \$1,000. A system with a 166-MHz Pentium MMX processor, 16MB of RAM, and a 2.5GB hard drive now costs \$999.

"Quality has actually gone up with AAP," said William E. McCracken, general manager of sales and service at the IBM PC Co. "The quality is much better than before. We have taken folks out of the program on the spot for not adhering to our standards."

IBM, in Armonk, N.Y., can be reached at <http://www.ibm.com>.

— Dan Briody

For the record

In our Nov. 10 review of PC workstations, we reported that the IBM Intellistation M Pro was the slowest of three systems we tested. (See Product Reviews, page 148.) We later found that the IBM system was tested at a greater clock depth. Because higher resolution can hurt performance, we reran our

applications benchmark. The change in clocks did not alter IBM's relative rank, though its overall time improved, decreasing by 1.2 percent. Of the three units we tested, the fastest was the HP Kayak XU PC Workstation with an average total time of 5 minutes, 52 seconds. (See Product Reviews, Sept. 15, page 121.) In second place was the Compaq Profes-

sional Workstation 5100 at 6 minutes, 7 seconds. The IBM's new time was 6 minutes, 42 seconds, which makes it 9 percent slower than Compaq's and 14 percent slower than HP's units. All systems were tested in similar configurations, though you can sometimes achieve higher performance by changing subsystems, drivers, etc.

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SPECIAL COVERAGE: INTERNET WORLD

XML management applications

Intra.doc accesses Web legacy documents

By Dana Gardner

AS SOFTWARE GIANTS Netscape, Microsoft, and Lotus work to bring XML-tagging tools to market, a Minneapolis company is announcing one of the first XML-based management applications to help organizations access legacy documents via the Web.

Next month at the Internet World show in New York and the Documentation London show in England, IntraNet Solutions will announce products that combine its Intra.doc product with Extensible Markup Language (XML).

"The uniqueness is that we're trying to expedite the authoring environment and database access," said Vern Hanzlik, vice president of product management at IntraNet Solutions. "XML tags objects so you can always find them in a

consistent way."

XML lets content producers define their own descriptive tags, called meta data, and create dynamic document repositories. Those make use of indexing and retrieval schemes to publish documents on the fly via intranets.

For Intranet Solutions, those documents are typically PDF documents, such as technical manuals, product safety sheets, and product catalogs.

The XML-enabled version of Intra.doc Management System will let users view various document types in original format, using Adobe's Portable Document Format technology.

Users can then extend Web servers from static page publishing to build business libraries with such features as revision control and au-

tomed publishing.

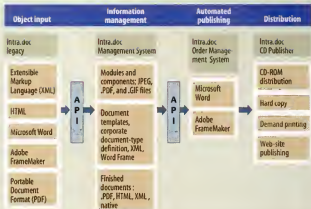
The product will arrive in the first quarter of 1998; pricing information was not available.

Analysts said that finding a way to bring such material to a Web audience in a coordinated, manageable way is valuable.

"It's really exciting because you can do business applications instead of search and retrieve," said Bill Zoellick, director of CAP Ventures, in Norwell, Mass. "Different industries are setting up their own classification schemes to fit these documents, industry by industry."

Netscape with its Aurora project is working to bring XML-based au-

Translating objects to the Web



SOURCE: INTRANET SOLUTIONS

Web-authoring tools mature

By Jeff Walsh

WEBMASTERS will get a peek at the next generation of authoring tools at Internet World in New York in December.

Clarix, Macromedia, RandomNoise, and Microsoft will be some of the companies showing off new Web-authoring products.

Clarix will announce the public beta version of ClarixHomePage 3.0 on both Mac OS and Windows platforms and show the tight integration with its FileMaker 4.0 database, which recently shipped.

Clarix HomePage 3.0 features enhanced site management through its Site Editor, which outlines the site's pages and contents and also finds and fixes broken links.

HomePage 3.0, which will ship in January at a price of \$99, also enables frame preview without having to launch a Web browser, company officials said, and has improved handling of tables. A global find and replace helps change text or code across an entire site.

Macromedia will announce it is shipping Dreamweaver, its \$499 visual tool for creating dynamic cross-browser HTML. Dreamweaver is targeting code-centric Webmasters with its Roundtrip HTML feature, in which code from text-based editors isn't manipulated by the addition of unnecessary code, unlike most visual tools.

Macromedia will also unveil a

site-building contest at Internet World, whereby the winners, who will be announced at Internet World in the spring, get round-trip airline tickets to complement their use of Roundtrip HTML.

RandomNoise will unveil Coda 2.0 and Coda Pro 2.0, which will provide a hybrid approach to creating highly dynamic Web pages and sites using embedded JavaBeans and Dynamic HTML. The product will enable Web designers to speed up page-creation time by automatically generating the necessary JavaScript to hook the bean to the rest of the Dynamic HTML page, according to officials at the company.

Microsoft, for its Internet offering, will show off the recently shipped FrontPage 98 for Windows 95, which adds a plethora of productivity enhancements. (See related article, page 65).

Clarix Corp., in Santa Clara, Calif., is at <http://www.clarix.com/>. Macromedia Inc., in San Francisco, is at <http://www.macromedia.com/>.

RandomNoise Inc., in San Francisco, is at <http://www.randomnoise.com/>.

Microsoft Corp., in Redmond, Wash., is at <http://www.microsoft.com/>.

Show Briefs

VIRTUE to preview 3-D software products

VIRTUE AT INTERNET WORLD in New York will unveil software that lets users view 3-D scenes. The software incorporates proprietary geometric compression, streaming, and intelligent-scene-management technologies. The software from Virtue is designed to enable interactive walk-throughs of rich architectural models and urban scenes, multi-User Web games, and shopping malls, company officials said.

Virtue's technology will be available in two forms: the Thunder and Lightning Web package and the Virtuoso Software Libraries; both will be available in the first quarter of 1998. Thunder is a tool that automatically optimizes standard VRML 2.0 files for quick display with the Lightning Browser. Lightning is a full VRML 2.0 compliant browser that can rapidly render any VRML 2.0 file.

The Virtuoso software libraries are designed for integration into existing products such as CAD/CAM/CAE systems. The libraries provide dramatic improvements in rendering performance, officials said. Virtue Ltd., in Israel, can be reached at <http://www.virtue.co.il/>.

INTERNET Billing introduces commerce-management help

INTERNET BILLING will launch a turnkey commerce-management solution for Web sites that have an existing Internet-merchant account. For clients who already have their own Internet mer-

chant accounts, "ibill" will serve as the conduit between the Web and the credit-card authorization network. ibill delivers transaction processing and access to the credit-card authorization network; a turnkey point-of-sale interface; and ibill's Commerce Management Interfaces that enable Web administrators to manage all aspects of transactions. Internet Billing Co. Ltd., in Fort Lauderdale, Fla., can be reached at <http://www.ibill.com/>.

CAT@LOG upgraded to Version 2.5

THE VISION FACTORY is offering a sneak peek of its upgrade to Cat@log, a software tool designed to architect, manage, and operate a Web-based storefront. The product consists of Cat@log Manager and Cat@log Builder. Cat@log Manager runs on an Internet server and facilitates communication between the customer and back-end database. Version 2.0 is capable of working with databases containing as many as 1,000 separate catalog items. Each catalog site is addressed by a unique domain name.

Cat@log Builder is a software application for designing Internet-commerce sites. Business-to-business and business-to-consumer solutions are both provided. Cat@log Builder provides menus, wizards, and page components for developing database-driven HTML pages. Cat@log Builder includes samples sites that illustrate a catalog structure and a database structure. Sample sites can be used as learning aids or as a starting point for custom development.

The Vision Factory, in Scotts Valley, Calif., can be reached at <http://www.thevisionfactory.com>.



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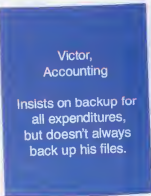
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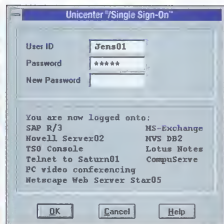
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High-end tool vendor Dynasty plots its return to tools ascendancy

■ Company to focus on vertical-industry software

By Ted Smalley Bowen

ENTERPRISE-development tools vendor Dynasty Technologies is planning its hopes on a vertical-industry initiative to augment its core programming environment.

The software company this week will release Version 3.5 of its Dynasty Development Environment, which bolsters the product's object-oriented programming capabilities via support for the Object Management Group's (OMG's) CORBA and the Unified Modeling Language.

Looking to tap the demand for vertical-industry components, Dynasty next year will begin rolling out class libraries and components specific to industries such as broadcast, financial, telecommunications and retail, according to vice president of marketing, Geoff Roach.

"We're looking at it from a vertical-industry perspective," Roach said. "We've got clusters of customers in broadcasting, financial media information services, and

Dynasty Technologies

Headquarters: Redwood Shores, Calif.

Founded: 1991

Ownership: Private, seven-company consortium, headed by European Technology & Finance (ETF), Rotterdam, The Netherlands

Quarterly revenues: Not available

Anticipated calendar 1997 revenues: \$15 million to \$20 million

SOURCE: DYNASTY TECHNOLOGIES

other markets who want packaged code for things like scheduling and billing. People don't want to re-write infrastructure."

Separately, during the first half of 1998, Dynasty will add support for Microsoft's Transaction Server (MTS) software, expanding the middleware options open to Dy-

nasty developers, according to Roach.

"As the scalability of NT picks up, we can play into that. You can take the same application definition, generate the communications layer, using simple TCP/IP, Tuxedo, VisiBroker, Orbix or MTS, and you don't have to change a line of code," Roach said.

Also new in Version 3.5 of Dynasty Development Environment is support for Version 1.1 of the Java Development Kit. This upgrade will also include ViewSoft's namesake graphical Internet rapid application development tool.

Dynasty has licensed Visigenic's Softwares VisiBroker Object Request Broker and will likely maintain the license despite Borland's acquisitions of Visigenic.

The Dynasty Development Environment runs on Unix, on Windows NT, and on other operating systems.

According to current management, Dynasty's lower-than-expected returns in recent quarters are due to the company's misjudgment of the high-end tools market.

Dynasty Technologies Inc., in Redwood Shores, Calif., is at <http://www.dynasty.com/>.

Borland to absorb Visigenic

By Ted Smalley Bowen and Katherine Bull

THE PENDING merger, via a stock swap, of Borland International and Visigenic Software has touched off speculation about further consolidation in the tools and middleware markets.

As part of its comeback effort, Borland International last week at Comdex announced plans to acquire CORBA middleware maker Visigenic Software, which licenses its VisiBroker CORBA-based object request broker (ORB) to major vendors, including Netscape, Novell, Sybase, and Oracle.

Borland hopes that the acquisition, which is expected to be completed next quarter, will give it a leg up in its plan to become a major provider of tools and middleware to integrate disparate client/server, Internet, and object-based systems.

"I think it's a positive for both companies. What's been missing in the CORBA space is the availability of productive and usable tool sets," said Melinda Ballou, an analyst at Meta Group, a market research company, in Stamford, Conn.

But the merger renewed conjecture that Oracle, which has licensing deals with both Visigenic and Borland and often has been cast as a suitor to both, might step in to acquire the combined company.

On the ORB-front, the acquisition confirmed what many analysts

have maintained: The ORB-only vendor is an endangered species.

"No one will survive as just an ORB vendor, unless they diversify," Ballou said. "Plumbing will become commodity-level. There are going to be more acquisitions and mergers going into the next phase of this market."

Borland will issue 12.5 million shares of stock to pay for the transaction, and will take a \$10 million to \$12 million charge for layoffs and restructuring in the first quarter, company officials said.

Of the current VisiBroker licenses, Sybase — whose PowerSoft tools division competes directly with Borland — is not expected to maintain its license for long.

One scenario has Sybase acquiring ORB market leader Iona Technologies. However, Iona officials asserted their intention to remain independent, and Sybase officials issued a statement reaffirming their commitment to VisiBroker, which is to be used in the company's Jaguar CTS transaction server, for the time being.

Visigenic Software Inc., in San Mateo, Calif., can be reached at <http://www.visigenic.com>. Borland International Inc., in Scotts Valley, Calif., can be reached at <http://www.borland.com>.

Lynda Radosevich contributed to this article.

Apple fine-tunes Rhapsody

By Jeff Walsh

APPLE COMPUTER made an unscheduled enhancement last week to the Rhapsody Developer Release when it announced it would ship later this month the "Blue Box," which enables native Mac OS applications to run within the Rhapsody operating system.

The Blue Box isn't scheduled to be delivered until Rhapsody's initial release in early 1998, but the component was ready early, so Apple will make it available to its pool of 10,000 developers.

"It rounds out the technology and demonstrates this isn't just smoke and mirrors," said Ernie Prabhakar, Rhapsody product marketing manager. "We're not making any claims to compatibility or performance, but it's better than nothing."

Developers received the first developer release for Rhapsody, Apple's next-generation operating system, in October, which enabled them to begin creating native "Yellow Box" Rhapsody applications.

The Blue Box enables users to switch between full-screen Blue Box and Yellow Box environments. The company has its reasons for

seeding Blue Box to developers early.

"The more people we get banging on it, the better the initial release will be," said Jordan Dea-Mattson, senior Rhapsody evangelist.

Until this release, no copies of the Blue Box have been made available to anyone outside Apple.

The Blue Box technically is a Mac OS virtual machine that runs in Rhapsody. It currently runs Mac OS 8, and should be compatible with any software that doesn't make hardware calls.

Rhapsody for PC-compatibles and the OpenStep Yellow Box for Windows have also been delivered since the initial October developer release, so Windows developers can also begin to develop Yellow Box applications. The Blue Box, however, will not run on the PC version of Rhapsody.

Rhapsody is being positioned by Apple as a server operating system and high-end desktop client, the same path Microsoft took with its NT operating system.

Apple Computer Inc., in Cupertino, Calif., can be reached at (408) 996-1010 or <http://www.apple.com/>.

TI to buy Amati for its xDSL technology

By Laura Kujubu

TEXAS INSTRUMENTS announced last week an agreement to buy Amati Communications, developer of Digital Subscriber Line (xDSL) technology, in the belief that there will be an increasing demand for the high-speed data-access technology in the semiconductor market. TI will pay \$395 million for Amati.

Through the agreement, TI intends to combine Amati's xDSL technology, which uses regular phone lines to transmit data at high speeds, with its digital signal processing (DSP) semiconductor technology.

"The need for bandwidth is going to increase, and the requirements for connectivity fit well with the DSP approach," said James Collinge, ase marketing manager of the networking business unit at the company.

This will not be the first time that

TI and Amati have teamed up. During the past year, the companies have been jointly building an xDSL chipset, using TI's TMS320C6x core DSP technology and precision

mixed-signal components and Amati's Discrete Multitone Technology (DMT) software. DMT is a modulation technology used in asymmetrical DSL. Customer samples will be available during the first quarter of next year.

Separately, TI announced a partnership with Westell Technologies through which the company's xDSL technologies will be used in Westell's DSL systems. If the acquisition of Amati is completed as planned, it will also use Amati's DMT software.

Meanwhile, in order to make the agreement with TI, Amati ended a merger agreement with Westell. The break-up fee to Westell is \$14.8 million.

One analyst said that TI's acquisition of Amati should be mutually beneficial for both companies and is indicative of an industry trend.

"Amati will gain the ability to have their products sold as part of the TI product portfolio, getting the benefits of worldwide presence and TI's ability for fast turnaround," said Gerry Kaufhold, a senior analyst at In-Stat, in Scottsdale, Ariz. "TI gains the [xDSL] technology that they can make customized spins on."

"This [acquisition] is part of an ongoing trend as emerging technologies start to look more like markets — bigger companies hooking up with smaller companies that have the technology that they need," Kaufhold said.

Texas Instruments Inc., in Dallas, can be reached at <http://www.ti.com>. Amati Communications Corp. in San Jose, Calif., can be reached at (408) 879-2000 or <http://www.amati.com>.



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Intergraph and Intel file dueling suits over patent rights

By Stannie Holt

SYSTEM-MAKER INTERGRAPH sued Intel last week, alleging the chip giant is trying to coerce it into giving up valuable patent rights.

The lawsuit claims Intel is attempting to get the rights at no cost to Intergraph's patents, which define the architecture of its Clipper microprocessor's cache-memory management.

Intel responded within hours with its own lawsuit, seeking a declaratory judgment that the patents that Intergraph is claiming to hold are invalid, and that

Intel was within its rights not to share proprietary information.

"We don't believe the patents they're claiming are valid," said Chuck Mulloy, Intel spokesperson. "... We don't think they invented what they think they invented."

Intergraph used the Clipper in Unix workstations before migrating its product lines to the Intel platform. The patented technology is at the heart of Intel's whole Pentium family of processors, Intergraph officials said.

However, Intel said Clipper and Pentium

technology are not related.

Intergraph's suit accuses Intel of anticompetitive behavior. For example, Intel didn't tell Intergraph about bugs in its chipsets, and told its employees to stop providing technical support to the system maker, ending several years

of cooperation, according to the lawsuit.

Intergraph is asking for unspecified monetary damages and an injunction to block Intel's alleged anticompetitive behavior.

Intel said it had the right to stop cooperating with Intergraph on joint projects once

Intergraph began asserting to all third-party OEMs this summer that it owned the microprocessor patents; Intel feared being named as a defendant or drawn into a third-party suit. Intel withdrew marketing support, and refused to sign any further nondisclosure agreements, Mulloy said.

Intergraph Corp., in Huntsville, Ala., is at (205) 922-8340. Intel Corp., in Santa Clara, Calif., can be reached at (800) 628-8686.

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Sybase makes plans for Adaptive Server IQ

SYBASE IN EARLY December plans to ship Adaptive Server IQ, which adds decision support to its Adaptive Server 11.5 database architecture.

Adaptive Server IQ is a decision-support database and the follow-up to Sybase IQ. The product will provide decision-support capabilities for Adaptive Server 11.5 users, acting as a data store. The software can also work in stand-alone mode, according to Sybase.

The combination of Adaptive Server 11.5 and the IQ software lets the database server perform decision-support and transaction processing, company officials said.

The integration of Adaptive Server and IQ could simplify training, installation, and maintenance, said one Sybase user planning to use both products.

"It just makes it easier," said James J. Dileo, senior vice president of information technology at the McManus Group, a New York advertising and public relations company. "It's a cleaner way of doing it."

Sybase also said it would formally discontinue support for its SQL Server 10.x database and Open Client 10.0.2 database connectivity middleware on Dec. 31, although 6-month extensions will be available.

Sybase officials are not likely to hold any sort of going-away party for Version 10. It contained bugs when it was released in 1994 and was viewed as a setback for the company. Sybase has been working to migrate Version 10 users to new versions in 1997, officials said.

Sybase Inc., in Emeryville, Calif., can be reached at <http://www.sybase.com>.

— Paul Krill

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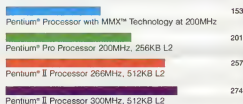
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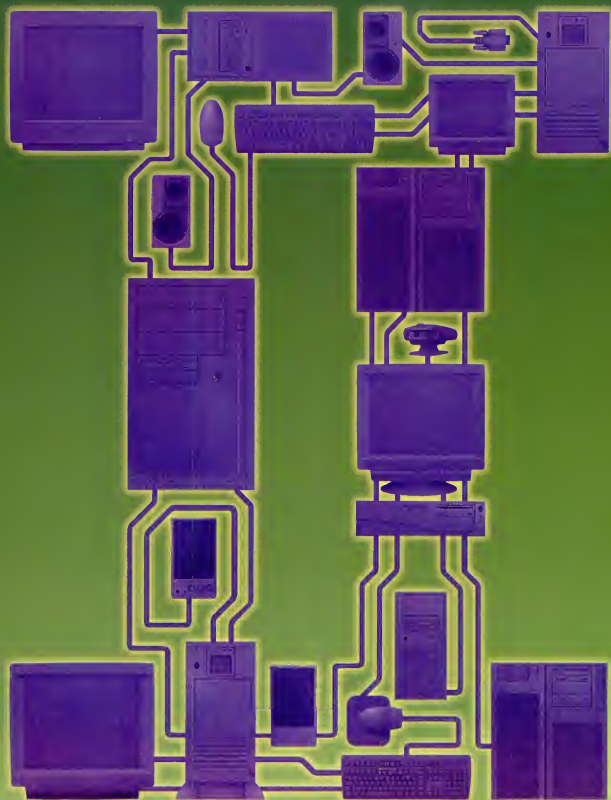


¹As compared to Pentium® processor-based systems without Dual Independent Bus architecture as measured by the SYSmarkNT® for Windows NT® 4.0 Performance Comparison benchmark. *was run without the benefits of Intel MMX™ technology mode. 8.25-0. Performance tests and ratings are measured using specific computer systems. Any difference in system hardware or software design or configuration may affect actual performance.

powerful Intel processor ever available, it's also specifically instrumented for manageability. It contains monitoring and self-test circuitry that help minimize downtime and

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Windows

Continued from page 1

week. Gates said Beta 2 of NT 5.0 — not the final product — would ship in the first half of 1998. Microsoft officials had promised that the upgrade would be commercially available by the first half of 1998, so Gates' statement was confirmation that NT 5.0's ship date has been delayed.

"You can assume that it is being pushed back," a Microsoft official said.

The NT 5.0 delay came as no surprise to industry analysts and observers who have said the first half of 1998 was too ambitious. Many analysts and Microsoft officials have noted the complexity and scale of the OS as causes of the additional time its development demands.

NT 5.0's IntelliMirror feature, which will allow for data storage and synchronization on remote servers and local machines, will go into beta testing in early 1998, Gates said.

Although Gates is "betting the company" on getting NT 5.0 into

Getting Windows 98 on corporate LANs

Microsoft plans to include the following corporate deployment tools in Windows 98.

Batch 98, which scripts the installation of Windows 98 so it does not require user intervention.

System Image, to replicate one Windows 98 system's configuration on multiple PCs.

INF Configuration Tool, to merge INF files with system files.

corporations and has aimed Windows 98 at consumers, Windows 98 still has a place in the enterprise, particularly on laptops.

The third beta release of Windows 98, due before Christmas, will mark the debut of three corporate deployment tools: Batch 98, System Image, and INF Configuration Tool. (See chart, above.)

Eventually, Windows 98 will gain driver-certification technology that will give IT managers the ability to control the installation of unauthorized devices into a system by checking for a digital signature, according to Carl Stork, general manager of the

Windows platform group.

The feature will not be ready when Windows 98 ships, but it will be included in an upgrade later in 1998, Stork said.

The addition of corporate deployment tools will help keep Windows 98 — due to ship in the first half of 1998 — in the enterprise, at least for the short term.

"For users of Windows 3.1, we need to make migration as seamless and as painless as possible," said Phil Holden, Windows product manager.

Reaction at Comdex to Windows 98 was mixed, but many observers said they would consider it instead of Windows NT.

"They're positioning NT to be the OS of choice, but all of our OS is 95-based," said Walter Adams, assistant manager in personal systems support at American Honda Motor, in Torrance, Calif.

Adams said his organization has spent the past year moving its almost 5,000 desktops from Windows 3.1 to Windows 95 and would likely stay with Windows 95 until 1999.

Microsoft Corp., in Redmond, Wash., is at (425) 882-8080.

Ephraim Schwartz, Elinor Mills, San Francisco online editor for the *JDG News Service*, an *InfoWorld* affiliate; and Joanne Taaffe, Paris correspondent for the *JDG News Service*, contributed to this article.

NT 5.0

Continued from page 1

power-management solutions to meet customer demand for NT 4.0 — which does not implement these features on notebooks — Microsoft does not support those home-grown solutions.

However, Microsoft has been working quietly with all major notebook vendors to help them develop a solution that will sit atop NT 5.0 and allow users to keep such capabilities as hot-swappable option bays and intelligent power management of PC cards, hard disks, and screens.

The issue, as described by Carl Stork, general manager of Microsoft's Windows Platform group, is that NT 5.0's support of power management and hot-plug docking for PC Card and CardBus are built around Advanced Configuration Power Interface (ACPI) and is hardware-based.

"Early ACPI adopters have a big plus," Stork said.

Some analysts say IT managers should have seen this problem coming.

"I think customers were aware that the two versions would not be compatible, unless they were asleep at the wheel," said Mike McGuire,

senior analyst at Dataquest, in San Jose, Calif.

However, for those who have NT 4.0 deployed on notebooks, the delay of NT 5.0 exacerbates the problem. (See related article, page 1.)

"We have about 150 notebooks running NT 4.0 now," an IT manager at a Fortune 1000 company said. "We want to get it down to supporting one OS. Because of the NT 5.0 delay, we were looking at putting NT 4.0 on notebooks whereas we might have waited. Now everything is up in the air."

Although officials at a handful of notebook vendors said they were working closely with Microsoft and they would offer upgrade kits that might incorporate "flashing the BIOS" when necessary, there appears to be great concern about the upgrade process.

"It's going to be like playing Russian roulette if you decide to go from NT 4.0 to NT 5.0 on earlier notebooks," said Rob Enderle, senior analyst at the Giga Information Group, in Santa Clara, Calif.

"IT managers do prefer to have power management and plug and play native," said Lewis Schrock, director of portable product marketing at Compaq, in Houston.

Microsoft Corp., in Redmond, Wash., can be reached at (425) 882-8080.

Links

Continued from page 1

processor from National Semiconductor, the AlertPack will be able to keep the management software notified of conditions such as system temperature.

The AlertPack will allow LAN-Desk Configuration manager to remotely wake up the system, diagnose the problem, and resolve it.

Later in 1998, Intel will introduce a LAN-on-motherboard chip for mobile systems that will include a modem interface and integrated management features.

Intel's LAN chip for notebooks could be a key advance for LAN-on-motherboard technology, said Virginia Brooks, an analyst at the Aberdeen Group, in Boston.

"It makes sense to do it with the mobile piece, because we're much more accepting of built-ins with mobile systems," Brooks said.

Even further down the track, Intel plans to integrate in its network chips capabilities like those that LAN architecture 3Com has promised in its hardware and software.

A LAN-on-motherboard product scheduled for early 2000 will be able to classify traffic among priority queues. The processor also will provide client and server authentication and support the IPsec standard for secure communications.

For its part, 3Com in the coming months will advance its strategy for

strengthening the role of the end station in LANs and WANs. The adapter giant will enhance its Dynamic-Access software with support for the Next Hop Resolution Protocol cut-through switching technology, and other features by year's end. 3Com also is expected to introduce in the first quarter of 1998 its first single-chip LAN adapter, code-named Cyclone.

Next year 3Com also will introduce centralized policy control via the Lightweight Directory Access Protocol.

Analysts liked the idea of policy controls.

"Over time there will be more people asking themselves, 'Would I like to give the CEO more priority than someone in the mail room?'" said Justin Smith, an analyst at International Data Corp., in Framingham, Mass.

One user said authentication and IPsec support on an adapter could free virtual private networks from the constraints of CPU performance.

"If that's being implemented on the adapter, theoretically, you're going to get wire-speed performance, and that's great," said Dave Brown, director of network services for The New York Times, in New York.

Intel Corp., in Santa Clara, Calif., is at <http://www.intel.com>. 3Com Corp., in Santa Clara, is at <http://www.3com.com>.

Andy Santoni contributed to this article.

Intel

Continued from page 1

pier is a key technology under development at Sun that promises to make Java applications run as fast as C++ applications.

Intel's media JavaBeans are part of the company's Media Framework for Java (MFJ), which is an implementation of the Java Media Framework, co-developed by Intel, Silicon Graphics, and JavaSoft.

MFJ enables Microsoft, Netscape, and Sun Java-execution environments to run Java applets containing audio- and video data natively on the Intel platform.

Intel's media JavaBeans are available in two configurations, as a software developer's kit and as a runtime version.

Currently, licensing the technology is free, but this may change, according to Dawson.

Digital Harbor, a Java ISV based in Orem, Utah, is bundling Intel's Simple Player Bean in its WAV productivity application environment.

"Intel's video Bean will enable our customers to embed video clips into documents," said Roger Bell, the vendor's president.

One analyst was skeptical about the Java/video combination.

"Using Java and video in the same application would make for a less-than-interactive experience, especially over the Internet," said Don DePalma, an analyst at Forrester Research, in Cambridge, Mass. "But this is a future's thing,

and it's good to see one of the large vendors create implementations of the Java Media Framework."

Intel's Media Framework for Java uses supports AVI, WMV, MOV, AU and MPEG file formats.

Intel Corp., in Santa Clara, Calif., can be reached at (408) 987-8080 or <http://www.intel.com/>.

BREWING YOUR OWN JAVA

In spite of Java's "write once, run anywhere" mantra, hardware companies are learning that it pays to develop Java applications to promote their own vertical business models.

Mitsubishi is developing Mobile Agent Framework (MAF) for Java, and Toshiba is developing an asynchronous messaging architecture, Event Centric for Java (ECJ).

MAF is designed to enable Java applications to synchronize over mobile networks, according to a source close to the company.

The framework will make it easy for ISVs and tools vendors to build mobile applications in Java and integrate them with JavaSoft's Java Mobile Framework.

Meanwhile, Toshiba's ECJ is slated for delivery early in 1998 and is en-

tirely written in Java, according to a company document.

ECJ is designed to enable Java browsers to invoke objects over a network. Typically, ECJ will be used in vertical applications such as plant monitoring, building automation, point-of-sale, and groupware to provide event-monitoring systems over Java's RMI to browsers.

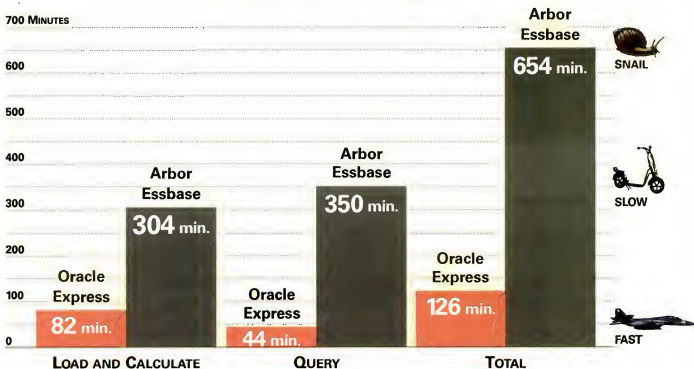
ECJ processes events at high speed, is complementary to the RMI, provides network transparent event delivery, and can apply various types of transports, for example, IP Multicast, TCP/IP, and UDP/IP.

Mitsubishi Electronics America, Inc. Cypress, Calif., can be reached at <http://www.mitsubishi.com/>. Toshiba, in Irvine, Calif., can be reached at <http://www.toshiba.com/>.

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-BYTE Magazine, Sept. 1997



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ANNOUNCED

ORACLE has announced the creation of a 500-person division dedicated to developing integrated applications for tasks such as messaging, workflow, and Internet commerce. The division will be headed-up by Beatriz Infante, senior vice president, who will take over the development of Oracle's InterOffice database-messaging software line. The division will be responsible for product development and marketing of Oracle's current Web Application Server, Internet-Commerce Server, and InterOffice products, as well as several other as yet unspecified products still under development. Oracle Corp.: (650) 506-7000.

BRIOT TECHNOLOGY officials said last week that the company is planning to develop Java clients, such as those that run on network computing devices from Sun Microsystems, to work with the Brio Enterprise product family. The clients are scheduled to be released in 1998. Brio Technology Inc.: (650) 851-8000.


NEC has unveiled its Express-5800 ES1200, a single-Pentium II server aimed at small-business and workgroup networks. Set to ship in December, with pricing starting at \$2,299, the product straddles the price of a desktop and offers the performance of a server. The mini-server's high-end features include the Pentium II with error-correcting code cache, an integrated SCSI controller, and a variable-speed fan in the chassis. It will feature Pentium II processors running at 233 MHz, 266 MHz, or 300 MHz, with 512KB of ECC cache and as much as 27GB of disk storage in three external drive bays. NEC Computer Systems: (888) 863-2669 (toll-free).

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TALK BACK

To contact Client/Server section writers, send e-mail to firstname_lastname@infoworld.com.

CLIENT/SERVER



HOTSEAT

Oracle's Ray Lane charts the database giant's diverse product strategies.

Venturing out

AS ORACLE branches out from its database roots into application areas such as enterprise resource planning (ERP) and Internet commerce, Microsoft has been breathing down its neck in its core database segment.

Ray Lane, Oracle's president and chief operating officer, spoke with San Francisco-based Elinor Mills, on-line editor for the IDG News Service, an InfoWorld affiliate, about how the company plans to protect its database market share as it pushes into new arenas.

With the success of Windows NT and Microsoft's move into Oracle's core market, how does Oracle plan to fight off Microsoft?

First of all, Microsoft is a leader, in fact has maybe become a monopoly in operating systems for the PC. We are the leader in enterprise databases. And so far you have to start with a position that we are in very different market spaces in terms of product and customer requirements. I think there's quite a bit of overlap when you look at where we are targeting, say five years from now, and that is in two markets. One market is enterprise platforms and applications where we certainly see ourselves as a leader. And I think Microsoft, at least in the platform space and personal productivity applica-

tions on PCs, will compete. The other [market] is Internet access to infrastructure and applications—products that allow Internet access. There's no one that would evaluate the products, that would say that Oracle7, now Oracle8, and SQL

Server are comparable products. When you get to a certain level in the enterprise, their product doesn't handle the requirements, nor does it scale. The further you go down in the enterprise, then it lets Microsoft compete because they compete on volume and price.

That obviously will change over the next several years. But we think that our core competence in building data-management products, [and] data servers, will keep us ahead of them.

Are there plans for Oracle applications to take over a major part of Oracle's business from Oracle DBMS?

Well, there really are two different businesses. One is a business that we characterize as systems infrastructure, the database being the most important piece.

But I would put the WebServer in there, I would put InterOffice in there, [and] our tools for building applications. The other business is business applications, high-value

» ORACLE page 33

Phoenix utility aims to untangle peripherals

■ PlugWorks adds to plug and play

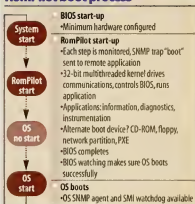
By Ephraim Schwartz
SYSTEM BIOS designer Phoenix Technologies announced last week a device-management utility for Windows 95 and future Windows 98 PCs, which extends Microsoft's plug-and-play capabilities to problem resolution for peripherals.

The utility, called PlugWorks, will work with PC Cards, Universal Serial Bus (USB), IEEE 1394 devices, as well as Device Bay connections and those that use the Infrared Data Association's specification for infrared data-communications ports.

But, it will not work with legacy I/O connections such as serial and parallel devices.

Company executives demonstrated on the Comdex show floor

RomPilot boot process



in Las Vegas last week PlugWorks' capability to recognize Interrupt request (IRQ) conflicts, as well as to detect devices plugged into the wrong USB ports, and they were able to recommend a solution such as swapping out one device for another.

» PHOENIX page 33

HP beefs up its low end with dual-chip Pentium II servers

By David Pendery

HEWLETT-PACKARD has enlarged the L series of its NetServer line with two entry-level, dual-Pentium II servers, announced last week.

The LC II is expected to phase out the company's low-end LC Pro server, and the LH II will slot into the middle of the line, alongside the LH Pro.

Both of HP's new models are scheduled for availability sometime in mid-January, 1998.

"These new servers improve HP's overall server offerings, equal only to Compaq in terms of hardware and performance across the board," said Devin Comiskey, pricing analyst at DH Brown Associates, in Port Chester, N.Y. In addition, the TopTools software included with the new servers offer "improved hardware-inventory

features" over HP's previous management tool.

Beyond the inclusion of Intel's Pentium II chip, the servers are essentially "incremental" improvements on previous L-series models, said Steven Hoffman, product manager of the network-server division at HP.

Hoffman added that the servers, in a large part, are showcases for HP's suite of integrated network and server-management tools, including TopTools, Integrated Remote Assistant, HP Navigator, and HP OpenView.

TopTools, HP's recently released network-management tool, uses a browser interface for a variety of network management, diagnostic, troubleshooting, notification, inventory, and log tools.

» HP page 35

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and a whole mess of G00* into a
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Imaging Scientist
MetaCreations

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Remote, mobile users spur demand for OFTP software

By Lynda Radosevich

NOW THAT telecommuting is a certified phenomenon, and mobile computing is a way of life, increasing numbers of users are accessing corporate networks via dial-up lines or the Internet.

But anyone who has listened to the endless ringing of a recalcitrant remote server modem, or has waited minutes for a simple Internet request to be processed, needs no convincing that these access methods are not yet dependable enough to support heavy-duty online transaction processing (OLTP) applications.

When the ability to connect to reliable networks at will is not an option, users must be able to store transaction data, then synchronize with the host later when a connection can be made. One vendor, Tactica, and a handful of analysts have adopted a new term for this model: offline transaction processing, or OFTP.

OFTP applications are appropriate any time when customers, partners, or mobile workers need to update transaction information on the spot, but don't have the time or ability to connect to the corporate network. OFTP can be applied to

applications including sales force automation, supply chain management, Internet commerce, package delivery, and home health care.

For example, more than 300 nurses and therapists working for the Visiting Nurse Health System, in Georgia, treat patients in their homes and document their assessments and treatments using pen-based computers. When the clinicians return to their offices, they plug the computers into phone lines, upload changes to a master database, and download updated patient records. If two clinicians try to post conflicting updated records, scripted business logic in the system invokes automated routines for resolving the conflicts.

This offline application is its organization's only option because the clinicians can't count on accessing the network during the work day, according to Bob Gibson, chief information officer at the Visiting Nurse Health System.

"Many of these patients are very poor and elderly. Some don't even have phones," Gibson said.

Building an offline application requires a different mindset than when building online applications, experts said.

OFTP software characteristics

Users can expect to find the following capabilities in a full-featured, offline transaction processing (OFTP) middleware package.

- Password authentication and encryption
- Client support for ActiveX, Java, and browsers
- Scripts for writing business logic and rules
- Database interfaces, including native APIs and ODBC
- Database replication including bidirectional synchronization at the field level
- Encryption and digital signatures for security
- Agents that react to data-driven events
- Management capabilities, such as application consoles and SNMP alerts
- Messaging and queuing for reliable communications once session is running
- Network access via LAN, dial-up, Internet, wireless networks, online services

The client/server architecture of an online application takes for granted a steady network connection between all devices. Database records are locked during a transaction, and the client doesn't receive a commitment back from the system until it can guarantee that a requested resource is available.

This process, the so-called two-phase commit of OLTP, ensures data integrity, according to Ezra Gottheil, an analyst at the Hur-

▷ OFTP page 36

PRODUCT SPOTLIGHT

PC COMPANION FOR CORPORATE USERS



Compaq last week announced its second-generation handheld device, the C-Series PC companion, which features a homegrown design and runs Microsoft's Windows CE 2.0.

Slated to ship during the first half of 1998, the C-Series is designed as an extension to the desktop or portable PC, giving users access to information found on their PCs, networks, and the Internet, officials said.

Available in both monochrome and color models, the C-Series will be based on a MIPS RISC chip, and it will include an integrated modem, a touch-screen display with 640-dpi-by-240-dpi resolution, integrated microphone, infrared port, and optimized keyboard, officials said. Links to PCs are available with a serial port connection.

Designed to get on corporate IT managers' approved buying lists, the device will also feature security, asset management, data synchronization, and remote-access features. Pricing was not announced.

Compaq Computer Corp., in Houston, can be reached at <http://www.compaq.com/>.

THE BUG REPORT

Bugs and fixes reported to Buglet

► **Artisoft's LANtastic** You may not be able to connect multiple Artisoft LANtastic 7.0 Internet Gateway clients to Internet Relay Chat (IRC). Most IRC servers do not allow more than one user with the same IP address to be on a server at any one time. Because one of the features of the LANtastic Internet Gateway is to allow multiple clients to share a single IP address, Artisoft officials said the IRC function isn't supported.

► **Microsoft servers** The Microsoft Index Server 1.1 does not ship with a filter for Adobe Acrobat files, so it can't filter Acrobat .PDF files. However, Microsoft officials said there is now a filter available from Adobe at <http://www.adobe.com/products/acrobat/filter.html>. Also, Microsoft's Small Business Server 4.0 client installation needs about 70MB of free hard drive space for installation. If you don't have that much space and try to install it anyway, you may end up with a blue screen with a white "LZ" in the upper left-hand corner. According to Microsoft officials, this happens because COMCTL32.DLL can't be copied while the operating system is running. The fix is to restart the system and rerun the client setup, presumably after you have freed up enough hard drive space.

► **Novell's IntranetWare** While using the Novell IntranetWare Client 4.1 for Novell's NetWare, make sure that you are using the proper policy editor if you are setting up or editing policy files. According to Novell, you can use POLEDTX.EXE on a Windows 95 workstation to create an NT policy file.

Found a bug? Tell the WebWorld Electric team at <http://www.linfo.com> or buglet@linfo.com. For more bug reports, browse to <http://www.bugnet.com>, or send e-mail to bugnet@bugnet.com.



Microsoft narrows Office upgrade path

■ Move seen to reflect shift in competitive landscape

By Jeff Walsh

MICROSOFT PUT A new upgrade policy into effect on Oct. 1 for Microsoft Office that limits the number of products from which a user can upgrade to Office.

The previous list of qualified products contained various DOS and Windows-based word processors, spreadsheets, and graphics programs. But the new list is scaled to only include all Microsoft products and some versions of WordPerfect and Lotus 1-2-3.

One analyst said the upgrade policy change sends a clear message.

"The signal it sends is that Microsoft no longer sees these as competitive offerings, and that people will move anyway because [Office has] become a standard," said Bob Enderle, a senior industry analyst at the Giga Information Group, in Santa Clara, Calif.

Enderle also speculated that because Office has become a standard, there may be legal issues concerning Microsoft trying to lure cus-

tomers from smaller competitors' products. Office 97's Small Business Edition still lets users upgrade from many competing products.

Microsoft made the move to "bring simplicity to our channel partners," said Matthew Price, Office group product manager.

The company announced the upgrade program to its channel partners in October.

The upgrade list was trimmed back to only include products from which users might still migrate to Office 97, Price said.

The latest versions of the Corel and Lotus suites were not included, because those users would be less likely to be "switchers," since they recently upgraded, Price said.

According to Microsoft officials, it has moved more than 20 million copies of Office 97 since the upgrade's release less than one year ago. The current rate of sales is twice that of earlier Office releases, according to a company press release.

The Redmond, Wash., software

Fewer applications prompt Microsoft to offer specific upgrade options

In addition to all previous Microsoft products, these are the only third-party products from which users can migrate to the standard version of Microsoft Office 97.

- WordPerfect for MS-DOS 4.0 to 5.1
- WordPerfect for Windows 5.1 to 6.0
- Lotus 1-2-3 for Windows 1.0 to 4.01
- Lotus 1-2-3 for MS-DOS 2.01 to 3.4

behemoth last week announced the sales figures, citing corporate customers' transition to 32-bit Windows as a key factor pushing the high volume.

Officials touted major sales to high-profile organizations including World Bank, Chrysler, Dell Computer, St. John Medical Center, and NationsBanc Montgomery Securities.

Microsoft Corp., in Redmond, Wash., is at (425) 936-8080 or <http://www.microsoft.com/>.

Phoenix

Continued from page 29

Once installed, PlugWorks is invoked automatically and will display a message on the screen if a new device is not recognized. According to Steven Andler, vice president of marketing at Phoenix, the program will reduce end-user calls to the help desk as well as returns to peripheral manufacturers.

A Peripheral Application Pack is also available for in-house development of custom plug-ins for proprietary devices.

Phoenix also announced that it will make its RomPilot software available to system OEMs in December. RomPilot will give system managers the ability to remotely control a system in a pre-boot state for diagnosis and problem resolution, and will be an option in the next version of the Phoenix BIOS. It will be available for servers, workstations, desktops, and portables.

Future versions of RomPilot will include the ability to initialize Intelligent I/O (I2O) processor IRQs and be able to test and configure I2O sub-systems and download I2O code, as well as the ability to configure any Advanced Configuration and Power Interface device and test it in a pre-boot state.

Phoenix Technologies Ltd., in Irvine, Calif., can be reached at <http://www.phoenix.com>.

Oracle

Continued from page 29

business applications, and they're prepackaged. And so I don't think of one eating into the other. I do see one business growing faster than the other so the mix of Oracle's business will change. Today, if I leave the services business out of it, in other words just measure the products, the database business is probably 60 percent of our business, maybe 65 percent. The applications business is 20 [percent] to 25 percent and the rest is the tools business — middleware and tools. So I would expect that over the next couple of years for applications to move up to maybe as much as 40 percent, database to come down to 50 percent or maybe 45 percent, and the rest will remain tools. So the applications business is the fastest growing business at Oracle and I expect it to be so for some time.

IBM recently signed an agreement with SAP to link IBM Net.Commerce server suite with SAP's ERP applications. Oracle has reportedly declined IBM's advances to partner on that. What is Oracle's strategy on this?

We're the only applications vendor that has our own technology underneath the applications. We could do it with IBM. We would just now have to build our applications to a second set of APIs. We haven't

done that in the database business, so we're not likely to do it in the Web-server area. We basically build our applications on our own technology.

What are Oracle's plans for Internet-Commerce Server and i-commerce in general?
We have focused all of our product development groups, database, Web server, all of our communications software and database-messaging software, our tools, our applications ... on the Internet.

Now what does that mean? The data server is able to manage multiple data types — very important for the Web. Our tools in the past built applications on a Windows or Unix client and would talk to an application server that had data integrated on Unix or NT. Now, you can partition the application all back to the server, move all the code back to the server, and all you need is a browser to access these applications. The pre-packaged applications, like financials and manufacturing, all operate on Web-application servers that you access with a browser over the Internet.

What's Oracle's strategy with regard to Web Applications Server, and are there plans to implement Sun's forthcoming Enterprise JavaBeans layer into it?

You [will] get more manageability, more scalability, more reliability out of our Web Applications Server. You get applications that can sup-

PRODUCT SPOTLIGHT

PRESENTER OFFERS DIGITAL AUDIO/VIDEO

Eloquent will ship Presenter 3.0 this month, its on-demand software that delivers indexed digital presentations to the desktop. The software streams digital video and audio of a speaker giving a presentation, along with running text of his or



her speech and any slides presented. The software can also capture demos given on computer screens or drawn on white boards. All are synchronized together and can be delivered to any Web browser. The software can be used for computer-based training and can also deliver corporate

messages throughout the enterprise. A Presenter Server stores the presentations, which now are mastered by Eloquent, (the company does plan to release its authoring tools). The software tracks usage and generates reports to help measure the return on investment from using the software. Pricing for the server product starts at \$12,000 for a 10-stream server, with additional streams priced at \$1,200. Usage tracking costs \$200 per stream. The browser plug-ins for the clients are free. Eloquent Inc., in San Mateo, Calif., is at (650) 294-6500 or <http://www.eloquent.com/>.

port things like transaction security, fail-over, scalability on parallel servers. We fully endorse Enterprise JavaBeans in all of our server products.
Oracle, in Redwood Shores, Calif.,

can be reached at (506) 506-7000 <http://www.oracle.com/>.

Elinor Mills is an editor at large for the IDG News Service, San Francisco.

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Vendors tout processor technology

By Andy Santoni

WHILE INTEL TOUTS A 450 MHz version of the Pentium II, IBM will describe a 1.1 GHz PowerPC processor at the International Solid-State Circuits Conference (ISSCC) in San Francisco this coming February.

Systems built around the chips will not be available anytime soon, however.

According to Linley Gwennap, editor in chief of the *Microprocessor Report*, in Sunnyvale, Calif., developments reported at ISSCC may take months or even longer to result in commercial parts, and some never get to market.

Engineers at Intel's Hillsboro, Ore., facility will describe a "third-generation" P6 microprocessor [that] has 7.5 million transistors in a 131-square-millimeter die in a 0.25-micrometer [micron] process,

and achieves 450 MHz."

The P6 generation includes the Pentium Pro processor and the Pentium II, both built with 0.35-micron technology.

The next iteration of the architecture, the 0.25-micron Pentium II, code-named Deschutes, is expected in March or April 1998.

"Circuits operate between 1.4 V and 2.2 V to provide enhanced support for both mobile and servers," according to the ISSCC Advanced Program. "A 3.6 [GB] back-side bus supports two [Level 2] cache types, with up to 2MB on separate cache chips."

The two Level 2 cache types are memory that operate at the full speed of the processor or at half of the speed of the CPU, explained Nathan Brookwood, a principal analyst at Dataquest, in San Jose, Calif.

An Intel representative added that the half-speed cache used in Slot-1 Pentium II cartridges is commercially available in burst static RAM, and the full-speed parts are custom static-RAM built by Intel for use in Slot-2 processors coming next year.

However, Intel's commitment to deliver a paper at ISSCC doesn't guarantee that the company will not disclose even higher performance than promised in the paper's title.

Before the 1997 ISSCC, Intel planned to present a paper on a "300-MHz CMOS microprocessor with multimedia technology." By the time it was presented, Intel had chips running at more than 450 MHz—albeit with large cooling systems.

At the 1998 session, Advanced Micro Devices will describe a 0.25-micron version of its K6 processor

» PROCESSOR page 36

IBM, Sequent plan turnkey data-warehousing bundles

By Paul Krill

IBM HAS PUT together a turnkey, hardware-and-software solution for data-warehouse deployment in public utilities applications, and Sequent Computer Systems is planning a similar package for database marketing.

The IBM DecisionEdge for Utilities, which is available now at a price of about \$2 million, is intended to help utilities companies mine business intelligence as increased competition becomes commonplace in utility product sales.

IBM's package is designed to help public utilities companies learn more about what products their customers may be interested in, said John Dunn, group vice president and chief technology officer with NIPSCO Industries, an energy utility company, in Merrillville, Ind.

"The challenge that utilities face is they have an awful lot of information about credit-worthiness, but we don't know much else about you," Dunn said.

The package supports development of marketing programs, using demographic data to build a customer relationship database. A company, for example, could use this data to find out if customers might be interested in an ancillary service, such as home security.

Specific applications provided in the package are customer segmentation and profiling, one-to-one marketing, customer retention, and customer and product profitability.

Components of the DecisionEdge for Utilities include IBM's Intelligent Miner data-mining tool, RS/6000 server, AIX operating system, and a copy of DB2 Universal Database.

Also included are database-marketing software, marketing-campaign management software, consulting, and services. Data transformation also is provided.

Sequent, meanwhile, is planning to release in early 1998 a turnkey solution for database marketing. Complete Warehouse for Database Marketing, a hardware-and-software solution, takes existing database data and enriches it with external data for specific customer segments, company officials said.

The package, which will include data-mining and campaign-management software and services, is expected to cost about \$500,000.

Sequent this week unveiled Complete Warehouse for Fraud Detection, a hardware-and-software package that takes SQL database data and examines transactions for fraud detection in areas such as stock purchases and government benefit programs.

The \$500,000 package features a NUMA-Q server and SRA's Knowledge Discovery in Databases software for detecting fraudulent practices.

Sequent Computer Systems, in Beaverton, Ore., can be reached at (503) 626-5700. IBM, in Armonk, N.Y., is at (914) 765-1900.

HP gains third-party support for JetSend

By Dan Briody

HEWLETT-PACKARD's quest to make its JetSend protocol ubiquitous took another large step forward last week when thirteen more vendors signed agreements to become licensees of the communication technology.

The JetSend technology, which lets any device on a network communicate and send information to any other device on a network, is gaining supporters rapidly, accord-

ing HP believes that the protocol will not replace drivers in PCs, but that it will certainly reduce the number of applications needed on each PC to receive and read documents, according to company officials.

The latest round of JetSend licenses includes:

- Axis Communications (thin servers for peripheral network connectivity, including storage servers, CD-ROM servers, print servers, and digital camera servers);
- Canon (copiers, fax machines, printers, and digital cameras);
- Castelle (specialized network fax servers, including network fax and print servers);
- Cisco Systems (networking infrastructure products for the Internet);
- Counterpoint Systems Foundry (infrared communication technology and software);
- Cylink (network security solutions and wireless communications);
- Genoa Technology (testing products for the computer, printer, and fax industries);
- Kofax Image Products (scanner connectivity accessories);
- Matsushita/Panasonic (whiteboards, digital cameras, scanners, video recorders, projectors, and telecommunication equipment);
- Ricoh (copiers, fax machines, printers, scanners, digital cameras, and tablet PCs);
- Wind River Systems (operating systems and tools for digital cam-

eras, printers, and other information appliances);

■ Xerox (copiers, printers, and imaging systems); and

■ Xionics (embedded digital systems for printers, copiers, and multifunction peripherals).

JetSend is available to the vendors for a one-time licensing fee of \$15,000.

Hewlett-Packard Co., in Palo Alto, Calif., can be reached at (650) 857-1501 or <http://www.hp.com>.

L&H unveils speech-recognition software

By James Nicolai

LERNOU & HAUSPICE (L&H) last week unveiled two dictation software packages for the PC and announced plans to enable non-PC devices with similar capabilities.

The company demonstrated Voice Xpress, a continuous-dictation software package that allows users to write, edit, and format documents by issuing voice commands into a microphone, and Voice Xpress Plus, a version of the technology built into Microsoft Word. Both products are expected to ship in the first quarter of 1998 at a price less than \$100.

The company also demonstrated a prototype of its Voice Page application, which can retrieve and read compressed voice messages.

Slated to ship in mid-1998, the

page can store 30 voice messages each as long as 20 seconds, according to officials.

L&H's advanced "natural language" technology lets users speak to their PCs "as you might converse with a friend," without needing to learn set instruction phrases to format documents, said Gaston Bastians, president and CEO of L&H.

Although L&H is prepared to release versions of Voice Xpress for virtually all of Microsoft's desktop applications, a more desirable route would be if the software giant embedded the L&H technology into its operating systems, according to Bastians. (See "Voice recognition may become the next UI," Nov. 17, page 3.)

Microsoft in September invested \$45 million in L&H and agreed

to develop a common API for speech recognition.

"Our technology is 95-percent accurate, and right now that is not good enough for Microsoft to use in its OS," Bastians said. "They are always conservative with Windows; they won't change quickly just because there's something sexy out there."

L&H said that its technology also will begin to appear in smartphones and handheld computer devices based on the Windows CE platform.

Lernout & Hauspice Speech Products Inc., in Burlington, Mass., can be reached at (617) 238-0960.

James Nicolai is a San Francisco correspondent with the IDG News Service, an InfoWorld affiliate.

Companies that plan to implement HP's JetSend protocol

Axis Communications
Canon
Castelle
Cisco Systems
Counterpoint Systems Foundry
Cylink
Genoa Technology
Kofax Image Products
Matsushita/Panasonic
Ricoh
Wind River Systems
Xerox
Xionics

ing to an HP representative.

As more and more devices include the JetSend firmware or software—depending on the nature of the device—HP hopes that communications between a limitless number of devices, both in the consumer and commercial, will be possible.

Claris puts old Mac applications out to pasture

By Jeff Walsh
CLARIS RECENTLY announced that it would retire six of its original Macintosh applications, due to dwindling sales.

The company will stop selling MacPaint, MacWrite II, MacWrite Pro, MacProject Pro, Easy Business Cards, and Claris OfficeMail as of Jan. 1, 1998.

Claris, an Apple subsidiary, said sales on these products dwindled because its ClarisWorks product "evolved to be a superior solution." Claris will offer users of all but the OfficeMail and MacProject products the ability to upgrade to ClarisWorks for a price of \$49.

With the absence of these products, Claris' product line will be almost entirely cross-platform be-

tween Mac OS and Windows.

One analyst said the move isn't surprising for Claris.

"Given [Apple's] arrangement with Microsoft, it makes sense," said Rob Enderle, a senior industry analyst at the Giga Information Group, in Santa Clara, Calif. "Apple and Claris are joined at the hip."

Claris also identified other vendors for its MacProject Pro and OfficeMail customers to which to migrate, and the company said it will help customers with the transition.

For MacProject Pro customers, Claris listed several vendors whose project-management applications can import MacProject Pro files. Claris listed Advanced Management Solutions' AMS Schedule Publisher; AEC Software's FastTrack Schedule;

Intra2000's IntraPlan; Micro Planning International's Micro Planner Xpert and Micro Planner Manager; Microsoft's Microsoft Project 4.0; and Welcom Software Technology's Open Plan.

For OfficeMail customers, Claris pointed them to the QuickMail Pro Server from CE Software if they need a PowerPC e-mail server, and to CommuniGate Server from Stalker Software if they need a non-PowerPC 68000 series server.

Claris also said it will support all of its retired products until Dec. 31, 1998.

Detailed contact information for the third-party vendors can be found on Claris' Web page.

Claris Corp., in Santa Clara, Calif., is at <http://www.claris.com/>.

SAS data mining to integrate with Exchange's solution

By Paul Krill

SAS AND EXCHANGE Applications in early-1998 will link data-mining and marketing campaign management packages in order to provide a solution for predictive marketing.

The arrangement calls for the integration of the Exchange Valex marketing application and SAS' forthcoming Enterprise Miner data-mining tool.

Valex is a direct marketing tool for managing relations with customers, and Enterprise Miner utilizes sophisticated data-mining techniques, such as neural networks, to anticipate customer behavior.

One customer who is planning to use both products said that the SAS tool is easier to use than previous SAS products.

"One of the things about [Enterprise Miner] is it doesn't look like a SAS product," said Bob Boroski, manager of database marketing at the BCTel, a telecommunications company, in Vancouver. "It's got a GUI interface."

An application-programming interface will support exchange of data between the two products.

Although packaging details have not been finalized, the integration

will happen when Valex 2.0 and Enterprise Miner ship in early-1998, officials said.

The Valex tool, priced starting at \$150,000, runs on Unix and Windows NT servers and works with Windows clients.

Exchange is also planning to support Web clients with its Valex application, officials said.

SAS' Enterprise Miner is due in March. It will run on Windows clients and NT and Unix servers.

Separately, SAS officials said they plan to more closely integrate their decision-support tools with SAP client-server applications.

An enhanced interface, scheduled for release by March, will access SAP's general ledger from the SAS' CFO Vision for financial consolidation and reporting.

Also, Enterprise Miner will be integrated with SAP applications via this interface. The SAS meta-data repository will manage data from SAP applications.

Exchange Applications, in Boston, can be reached at (617) 737-2244 or <http://www.exapps.com>. SAS Institute Inc., in Cary, N.C., can be reached at (919) 677-8000 or <http://www.sas.com>.

► Integrating SAS and Exchange products eliminates the need to model and score entire databases.

HP

Continued from page 29

The result, Hoffman said, is a cohesive set of network management, diagnostic, troubleshooting, notification, inventory, and log tools.

"This manageability is an important legacy from our systems experience, both network and desktop," Hoffman said.

Hoffman added that firmware,

coded into the system's controllers, will monitor the multiple management tools and protocols. The interface was developed jointly by HP, IBM, Intel, NEC and others.

The NetServer LC II will be available in configurations of one or two 266-MHz or 300-MHz Pentium II processors and as much as 512MB of ECC EDO RAM.

The model will also be available with HP's NetRaid disk array, housing as much as 36GB of storage. Prices will start at \$2,700.

The NetServer LH II, with one or two 266-MHz or 300-MHz Pentium IIs, as much as 515MB of ECC EDO RAM, and can be clustered using Microsoft's Cluster Server two-node fail-over software.

The server also has redundant power supplies, Ultra-Wide SCSI controllers, HP's NetRaid disk array and can house as much as 109GB of storage capacity. The computer will start at \$4,200.

Hewlett-Packard Co., in Palo Alto, Calif., is at <http://www.hp.com/>.

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ACER FILLS OUT ITS SERVER LINE

ACER LAST WEEK announced two symmetric multiprocessing servers, hitting the departmental and entry-level spots in the market.

The AcerAltos 19000Pro4 can be configured with as many as four 200-MHz Pentium Pro processors, with 512KB or 1MB of cache per CPU. It includes a 64-bit graphics controller and can hold as much as 4GB of error-correcting code (ECC) RAM.

Aimed at large corporate departments, this model has a 14-bay, hot-plug drive-tray management system for expansion. Also, its four-channel SCSI backplane improves fault tolerance and increases disk I/O, according to company officials.

The latest addition to Acer's entry-level server offerings, the AcerAltos 930, can hold one or two Pentium II processors running between 233 MHz and 300 MHz. It also includes 512KB of cache, room for 512MB of ECC RAM, and Accelerated Graphics Port support. The 930 comes with a built-in CD-ROM drive, Ultra-Wide SCSI, and 64-bit controllers, which save expansion slots.

Both servers run NetWare, Windows NT, and SCO Unix. The servers are slated to ship in December.

Pricing for the AcerAltos 19000Pro4 will start at \$14,000, and the AcerAltos 930 will begin pricing at \$3,200.

Acer America Corp., in San Jose, Calif., can be reached at <http://www.acer.com>.

— Andrew Foster

OFTP

Continued from page 32

witz Group, a consulting company in Newton, Mass.

Conversely, in an offline application, the client contains the data to execute a transaction. When a connection is made, modified records are synchronized back into the host database. If another client has updated that record, the information becomes "dirty" and conflicts arise.

"If two sales people place orders for the last widget, how do you resolve it?" Gonthell asked.

The answer: By setting up business rules to resolve potential conflicts, and automating the execution of the rules in the OFTP system.

Sulzer Bingham Pumps, in Portland, Ore., builds an online application that helps its salespeople configure and order custom-engineered pumps for oil and gas industry customers. On occasion, salespeople submit conflicting information, such as different spellings for the same customer.

To solve the problem, Sulzer is building automated procedures for handling conflicts. For instance, one rule will check customer numbers in an accounting system against customer names in a contact-management application. It will then flag discrepancies and send them back to the salespeople, said Brian Wagstaff, a systems engineer at Sulzer Bingham Pumps.

"Sulzer Pumps is very distributed," Wagstaff said. "It's a group of seven aligned pump companies ... so maintaining accurate central data is crucial."

Today, IT departments typically adapt OUP applications for offline usage themselves using database

replication, message-queuing software, and perhaps some security software. If they formalize the conflict-resolution process, they typically do it using

"Writing middleware is very hard, but it's the kind of stuff that [corporate IT] engineers like to do."

— Jim Johnson, Standish Group

and to spec; Johnson said. But help is becoming available.

Sophisticated middleware products are emerging that combine replication, message queuing, security and conflict resolution functions. These include Oracle's Mobile Agents, RadNet's Webshare, Synchrologic's SyncKit, Tactica's Capera, and XcelleNet's RemoteWare.

Of these packages, Tactica's Capera is furthest along the evolutionary curve in terms of handling conflict resolution, Gonthell said. For example, Capera treats transactions as objects and lets developers write business rules in a Java-like scripting language that executes activities when conflicts arise during replication.

In one sense, Lotus Notes fits into this category, but Notes was built for document replications as opposed to transaction processing, and it has its own database as opposed to sitting on top of an IBM, Informix, Oracle, or Sybase database, Johnson said.

The OFTP vendors say their package solutions offer shortcuts

and solutions that enable users to finish and deliver their applications more quickly and reliably.

Several analysts agree, but note that despite its promise, the OFTP middleware market is taking off slowly. The reason: most corporations would rather build middleware than buy it.

"Writing middleware is very hard, but it's the kind of stuff that [corporate IT] engineers like to do," Johnson said.

Also, many OFTP middleware vendors are young, small, or both, and their products are not well-known. The only huge vendor, Oracle, has not done a good job of marketing its package, analysts said.

Users who are aware of OFTP products and aren't resistant to their lure, said the benefits can be compelling.

Sulzer is using Tactica's Capera to help automate its middleware routines.

"Like any scripts program, it saves us time and cuts out overhead," Wagstaff said. "We've got an eclectic application that has to interface with manufacturing systems in this country and seven other countries, and it's flexible enough to handle it."

OFTP middleware benefits can extend to other types of applications, such as decision-support applications, as well.

Sedgwick Information Systems, a Melville, N.Y., division of insurance broker Sedgwick James, is using a new feature in Information Builder's Enterprise Data Access 3.x middleware to enable its Fortune 500 customers to run reports on Sedgwick's risk-management information system while offline, said Alan Josefsek, an executive vice president at Sedgwick James.

"Before, you couldn't interrupt a job," Josefsek said. "Now, not only can I quit, I can let my PC communicate with the server, disconnect, come back, and retrieve my answer."

Although that may not seem like an earth-shattering improvement, it's an important part of keeping end-users happy.

"We have clients like PepsiCo, and they have users with very busy schedules," Josefsek said. "This is great because people are running around and want to use their laptops for something else. Some requests are quick, others make take a few minutes, and users might not have time to wait in this high-pressure world."

Oracle Corp., in Redwood Shores, Calif., is at (650) 506-7000 or <http://www.oracle.com>. RadNet Inc., in Cambridge, Mass., is at (617) 577-9422 or <http://www.radnet.com>. Synchrologic Inc., in Atlanta, is at (404) 876-3209 or <http://www.synchrologic.com>. Tactica Corp., in Portland, Ore., is at (503) 622-7800 or <http://www.tactica.com>. XcelleNet Inc., in Atlanta, is at (770) 804-2297 or <http://www.xcelle.net>.

Processor

Continued from page 34

micron version of its K6 processor that promises "performance increases up to 10 percent due to micro-architectural improvements."

"Floating-point instructions enhance graphics performance," according to the conference poster. The processor runs from a 100-MHz version of the Socket 7 bus, the preview noted.

On the PowerPC side, IBM Austin Research Laboratory will describe a single-issue PowerPC processor that runs as fast as 1.1 GHz at 25 C. The simple integer processor implements a subset of the PowerPC Instruction set.

IBM's Burlington, Vt., laboratory will describe a full-feature

PowerPC chip that uses the company's copper interconnect technology and 0.2-micron production process to achieve 480 MHz at 85 C and more than 500 MHz at room temperature.

The dual-issue PowerPC 750 processor uses copper for six layers of interconnect wiring.

Higher speed "is the entire theory behind copper," Brookwood said. As chip features shrink to 0.2 microns, the time delay between function elements, or gates, becomes more important than the time it takes for the gates themselves to operate, he explained.

"Above 0.2 microns, the gate delay still dominates," Brookwood said.

An IBM laboratory in Rochester,

Minn., will present a paper on a commercial multithreaded version of the PowerPC chip. "Instruction-stream multithreading improves execution time by helping hide the latency of memory accesses," according to the paper's preview.

Digital will describe a 600-MHz Alpha processor and a 200-MHz StrongARM processor, each implemented with 0.35-micron technology.

Digital Semiconductor, in Hudson, Mass., is at <http://www.digital.com/semiconductor/>. IBM Microelectronics, in Essex Junction, Vt., is at <http://www.chips.ibm.com/>. Intel Corp., in Santa Clara, Calif., is at <http://www.intel.com/>. Advanced Micro Devices, in Sunnyvale, Calif., is at <http://www.amd.com>.

STREETPRICES Hard drives

FOR THE WEEK OF NOV. 24

Enhanced IDE drive	Capacity	Access time ¹	Low	High	Average
Fujitsu MP3043	4.6GB	10	\$255	\$289	\$269
Maxtor DiamondMax Ultra MB4320A	4.3GB	11	\$225	\$278	\$259
Microplus Mustang MKC450A	4.0GB	11	\$214	\$279	\$252
Quantum Fireball ST Ultra 34302A	4.3GB	10	\$244	\$291	\$265
Seagate Medalist Ultra ST3430A	4.3GB	12	\$235	\$280	\$262
Western Digital Caviar Ultra KC3490A	4.3GB	11	\$257	\$297	\$274
SCSI drive					
Fujitsu Ultra SCSI M2954S	4.6GB	8	\$565	\$639	\$599
Microplus Stingray MC4743	4.3GB	10	\$319	\$362	\$339
Quantum Fireball ST 34302S	4.3GB	10	\$319	\$367	\$338
Seagate Barracuda ST34527N	4.6MB	8	\$523	\$645	\$574

THE LINEUP

Products	Last price ²	Next pricing	Products	Last price ²	Next pricing
Flatbed scanners	Sept. 12	Dec. 2	Multifunction printers	Oct. 6	Dec. 1
Hard drives	This week	March 9	Peripherals desktops	Nov. 17	Dec. 15
Jet printers	Nov. 10	March 2	Peripherals notebooks	Oct. 6	Dec. 1
Laser printers	Oct. 20	Jan. 26	RAM	Nov. 3	Feb. 9
Low prices	July 29	Oct. 21	Servers	Nov. 17	Feb. 2



All drives are internal 3.5-inch. All recent Street Price listings are available at <http://www.infoworld.com>. Individual Street Prices are based on telephone surveys of retailers, online resources, and price advertising in computer publications and regional newspapers. Price information was received between November 9 and Nov. 15, 1997.

¹Access time in milliseconds.

WINDOW MANAGER • BRIAN LIVINGSTON

Drag and drop Net files with FTP tool

THE INTERNET PROVIDES a wealth of information for Windows users. But some of that information, stored on FTP sites, has been less than ideal for Windows users to download and upload.

The best way to make use of FTP sites in Windows 95 or Windows NT is with a tool such as Internet Neighborhood. This shareware program, available in a single-user registered version for \$26.50 from Baltimore-based KnoWare, integrates itself into the Windows Explorer and makes file transfers intuitive.

Unlike other FTP programs, which use their own interfaces, Internet Neighborhood uses the Windows Explorer window as a built-in interface. FTP sites show up as folders underneath an Internet Neighborhood icon in your My Computer tree. Just as Microsoft's Network Neighborhood icon shows subfolders for any computers that reside on a network with your PC, Internet Neighborhood shows folders for FTP sites.



You can drag and drop files from an FTP site to your hard drive, and you can do the same to upload your files to an FTP site (if you have access rights). This process works exactly the same way as dragging any files in the Explorer. There's little or nothing to learn.

You can also use the Windows Clipboard to upload and download files. Just like files on your hard drive, files on an FTP site can be copied and pasted where you want them. For large files, Internet Neighborhood displays an estimate of the time it will take to complete the transfer, including the percentage completed and number of bytes transferred.

Internet Neighborhood includes an FTP Wizard to make it simple to add FTP sites. For example, if you wish to download files from ftp.netscape.com, specifying this site in the FTP Wizard immediately makes it available from within the Explorer window.

Internet Neighborhood works with firewalls, if your company has

one. The FTP Wizard includes settings to access your company's type of firewall, to establish a connection to the firewall computer, and to run a User Without Login command.

Internet Neighborhood is available by downloading IN32.ZIP from <http://www.knowareinc.com>. In addition to single-user licenses, Internet Neighborhood also offers a 50-user license for \$295 and an unlimited-user site license for \$495. In case you happen to need to uninstall Internet Neighborhood, read the uninstall directions at <http://www.knowareinc.com/uninstall.html>.

Because Internet Neighborhood is a 32-bit shell extension to the Explorer, it is loaded into memory by Windows when needed. Using the Control Panel's Add/Remove Programs feature to uninstall programs that are currently running may not work, so the company suggests a work-around. Uninstall Internet Neighborhood, if necessary, just after a warm boot, when the program hasn't yet been loaded.

Internet Neighborhood requires the latest version of three Microsoft support DLLs in your Windows\System folder: OLEAUT32.DLL, COMCTL32.DLL, and COMDLG32.DLL. If you do not have the updated versions of these files, they're available at <http://www.knowareinc.com/software/msdlls.zip>.

Multilink users, speak up

I'm planning a column on the use of the new multilink feature of Windows 95's Dial-Up Networking 1.2 and Windows NT 4.0's Remote Access Server module. Multilink combines multiple communication lines into a single communications session. This increases your bandwidth and therefore speed.

Your ISP must support multilink capabilities. In a recent Internet search, I found only one listing for an ISP supporting multilink: PowerNet Communications in Greenwood, S.C. (<http://www.hspower.com/multilink.htm>). Diamond Multimedia is preparing for a first quarter 1998 release a firmware upgrade to SupraExpress 56Kbps modems to support "Shotgun Technology." This is a built-in way to bond the data streams of two modems into a single multilink session — even if one of the modems is not equipped for multilinking.

Send me your experiences, with "Multilink" as the subject of your e-mail message.

Brian Livingston has written several best-selling Windows books, including the most recent Windows 95 Secrets (IDG Books). Send comments to brian_livingston@infoworld.com. Unfortunately, he cannot answer individual questions.

OMG gains ISO submitter role

THE INTERNATIONAL STANDARDS Organization (ISO) has granted the Object Management Group (OMG) authority to submit specifications directly to the global standards body for ratification.

Like Sun Microsystems, which recently became the first for-profit company to attain the status, the nonprofit OMG vendor consortium has been voted a Publicly Available Specifications (PAS) submitter.

PAS submitters present specifications to the ISO, which comprises roughly 100 national standards bodies, for "fast-track" adoption as ISO standards.

Fast-track adoption typically takes about six months, compared to the seven or more years required for earlier standards, according to OMG officials.

ISO approval of the C++ programming language, announced earlier this month, capped an eight-year effort. The OMG's CORBA specifications and services constitute a framework for the creation and management of distributed, object-based applications.

The Object Management Group can be reached at (508) 820-4300 or <http://www.omg.org/>.

— Ted Smalley Bowen

How does getting the weather forecast for the Olympic Games luge venue help control outsiders' access to your company's inside info?

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LOAD TIME	12 SECONDS	45 SECONDS
TOTAL AVERAGE TIME TO DATA	47 SECONDS	113 SECONDS
HEAD LIFE	30,000 TAPE CONTACT HRS.	10,000 TAPE CONTACT HRS.
MEDIA DURABILITY	30,000 USES	15,000 USES
POWER CONSUMPTION	12 WATTS	25 WATTS
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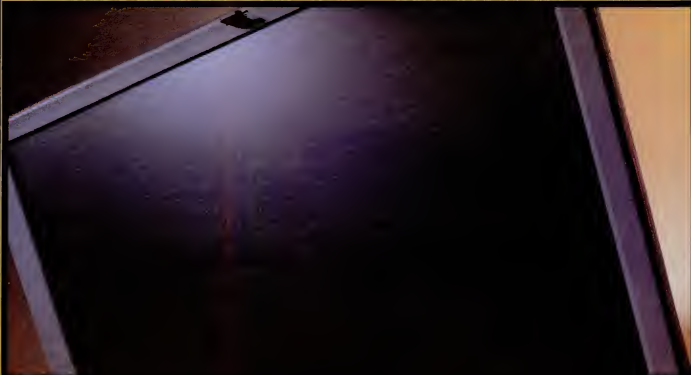
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www.hpresource.com/omnibook3000



HELP DESK • BRETT GLASS

Everything you need to know about the Pentium 'F0' bug

I'VE RECEIVED MANY queries from worried administrators about the Pentium 'F0' bug. Here's a summary of the most commonly asked questions and the answers to them.

What is the Pentium 'F0' bug?

This bug causes a Pentium system to freeze

up, requiring a hard reset, when certain machine language instructions are executed.

Which processors have the bug?

According to Intel, it's in the "P5" line of processors, from the original 60-MHz Pentium through the latest MMX models. "P6"



processors — the Pentium Pro and Pentium II — aren't affected.

What causes the bug to crop up?

The bug crops up during an instruction called CMPXCHG8B (compare and exchange 8 bytes), first introduced on the Pentium. It reads 8 bytes from memory, compares them with a quantity in a pair of CPU registers, and then overwrites memory with the contents of the registers.

Does this instruction have a legitimate use?

CMPXCHG8B is normally used to manipulate data structures called semaphores. In multitasking systems, semaphores serve as digital "stop lights," preventing collisions when two threads (or two CPUs in a multitasking system) want access to the same resource at the same time.

How does this cause the system to freeze?

To make sure that nothing else can meddle with a semaphore while the CPU is modifying it, the CMPXCHG8B instruction is usually preceded by a lock prefix — a byte that has the hexadecimal value F0. The prefix causes the CPU to seize exclusive control of memory while the instruction runs. Next comes the code for the instruction, then two more bytes that give information about the semaphore's location in memory. If these bytes are invalid, the CPU tries to report an error. But it can't; it has already committed to keeping the bus locked until the instruction is complete. So the machine grinds to a halt.

Who can trigger the bug?

Because the CMPXCHG8B instruction isn't privileged, any user who can write and execute a file can trigger the bug. If you can run a compiler or create or download an executable file, you can crash. But Java byte code is safe because it is interpreted.

What should I do?

Intel has put a fix on its Web site for OS providers to use. But because it is so easy to sail past all of the safeguards of a protected-mode operating system with this bug, you must take very strong precautions to protect mission-critical machines. Ensure that only trusted users can compile, download, or otherwise create an executable file or DLL. Disable ActiveX controls. Revoke users' privilege to execute any file in a directory to which they can write. Limit access to compilers and debugging tools such as the DOS DEBUG program and its equivalents in Windows 95 and Windows NT.

Brett Glass has been working with PCs and networks and fixing their bugs for 15 years. To submit a Help Desk query, call (800) 227-8365, Ext. 702, or send e-mail to brett_glass@infoworld.com. Visit his forum on InfoWorld Electric at <http://www.infoworld.com>.



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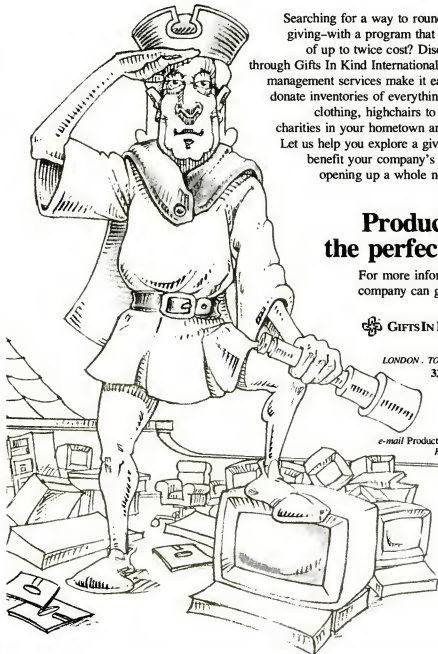
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ANNOUNCED

MANGOSOFT announced last week that its Medley97 Small Business Edition pooling technology now includes support for Windows 95 and Windows NT. Medley is a network operating system that allocates a portion of each user's hard disk for shared information, rather than using dedicated servers. MangoSoft also announced its Medley97 NT Server Edition, which enables users to add NT servers to a Medley resource pool. Medley97 Small Business Edition is available now, and pricing begins at \$249 for a two-seat software starter kit. Medley97 Server Edition is scheduled to ship next month, and pricing will begin at \$695. MangoSoft Corp.: <http://www.mango.com>.

TIVOLI SYSTEMS announced last week a new version of its Tivoli Management Environment (TME) 10 Information/Management product for customizing and automating help desks, call centers, and problem and configuration management. TME 10 Information/Management 1.1 offers Java and Web-browser support as well as tighter integration with other products in the TME product family, including TME 10 Software Distribution and TME 10 Global Enterprise Manager. Tivoli TME 10 Information/Management 1.1 is available now at no extra charge. Tivoli Systems Inc.: <http://www.tivoli.com>.

SHIPPING

COMPUTER ASSOCIATES began shipping last week its Unicenter TNG Microsoft Exchange Option and versions of ARCserve and Inoculan that support Microsoft Exchange Server 5.5. The Unicenter TNG Microsoft Exchange Option is designed to automate the maintenance and management of Microsoft Exchange servers. Computer Associates International Inc.: <http://www.cai.com>.

TALK BACK

To contact Networking & Telecom section writers, send e-mail to firstname_lastname@infoworld.com.

NETWORKING & TELECOM

Nortel, Rockwell add CDSL voice support

■ But Digital Subscriber Line choices may confuse users

By Stephen Lawson and Laura Kujubu
LAST WEEK Northern Telecom and Rockwell joined a growing band of vendors offering variants on Digital Subscriber Line (DSL) technology as a means of providing high-speed remote access.

The companies revealed that they will jointly promote Consumer DSL (CDSL), which uses a single phone line for a 128Kbps upstream link and up to 1Mbps downstream to the user, allowing for voice calls and Internet access at the same time.

Some analysts said CDSL could reduce the cost and difficulty of deploying DSL in carrier networks, which could mean services for end-users will be available sooner and at a reduced cost. But they also cautioned that widespread availability of DSL is still months away, and users should proceed with caution.

Nortel is developing CDSL

line cards for carrier central-office switches, so that service providers would not have to buy separate termination devices. Lucent recently announced that it is developing similar products for use in its switches, and it is expected to provide more details in the next two weeks.

The switch technology could make carriers into major low-cost providers of Internet access, according to Christine Traut, a strategist at Andersen Worldwide, a consultancy in Chicago. But the International Telecommunications Union has yet to settle on a standard for 1Mbps DSL.

Some carriers have begun offering commercial DSL services, in-

DSL alphabet soup

Acronym	Digital Subscriber Line (DSL) full name	Maximum data rate Downstream	Maximum data rate Upstream
ADSL	Asymmetric DSL	128Kbps	128Kbps
CDSL	Consumer DSL	1Mbps	128Kbps
HDSL	High-data-rate DSL	1.544Mbps	1.544Mbps
SDSL	Single-line DSL	768Kbps	768Kbps
VDSL	Very-high-data-rate DSL	52Mbps	2.3Mbps

cluding asymmetric DSL and symmetric DSL, in limited areas. But with the wide variety of DSL versions, the future is still murky, according to analysts.

"I've been tracking DSL since 1994, and vendors are making it more confusing than it has to be," said Beth Gage, an analyst at Tele-choice, in Verona, N.J.

Observers agreed that whatever form of the technology takes hold, few services will be available before late 1998, and DSL may be limited to large cities for the next several years.

"IS managers should ask themselves what applications they want to use over DSL," said Andrew Sorowka, president of TransGlobal Communications Research, a con-

sultancy in Roseville, Calif. "If there's more fire sharing, they'll find themselves moving more toward a symmetric technology."

These approaches — including High-data-rate DSL and Single-line DSL — transmit data at the same rate in both directions.

Others advised users to stay with a single service provider and to keep their options open.

"[In the] short term, people want high-speed connections so bad, they're willing to put up with this," Traut said. "As long as you stay in one place and use the same provider, you're fine."

One analyst agreed.

"If you're going to sign any deals for DSL, make sure all you have to do is pay a monthly fee and that whatever service is available at that time is what you'll use," said David Cooperstein, an analyst at Forrester Research, in Cambridge, Mass.

Northern Telecom, in Richardson, Texas, can be reached at <http://www.nortel.com>. Rockwell Semiconductor Systems, in Newport Beach, Calif., can be reached at <http://www.rss.rockwell.com>. Lucent Technologies, in Murray Hill, N.J., can be reached at <http://www.lucent.com>.

Groupware software

Microsoft trumpets Exchange

By Clare Haney
MICROSOFT officially launched the third major release of its groupware software, Exchange 5.5, at the Comdex trade show in Las Vegas last week. Senior company executives claimed that the product has already reached "critical mass" in terms of user acceptance.

Bill Gates, Microsoft chairman and CEO, expressed surprise over figures from the mail census newsletter *Electronic Mail & Messaging Systems* that reported more than 7.2 million Exchange units have now been sold.

Gates said that Exchange has had a much more successful first 18 months than Microsoft's Windows NT and its SQL Server database, as well as Lotus' Notes groupware software.

Rich Tong, vice president of marketing for Microsoft's personal and business systems group, said that 44 of the Fortune 100 companies have adopted Exchange as their standard corporate messaging system.

As an example of Exchange's penetration, Tong singled out General Electric, which has more than 92,000 Exchange units at 50 differ-

ent sites running on 300 Exchange servers.

Tong said that one of the new features of Exchange 5.5 is its improved scalability which offers "essentially no storage limitations." He added that Microsoft had quadrupled the speed of the software's backup capabilities. Another key feature is the product's capability to recover deleted mail.

Although Gates said Exchange now outperforms Notes in many areas, he admitted that "the area [where] we're still playing a bit of catch-up to Notes is groupware applications," adding that Microsoft is working hard on this.

One area in which Gates said Exchange 5.5 had made great strides is in coexistence with other messaging systems, including Notes. This has been facilitated through Microsoft's acquisition of LinkAge Software, he added.

Microsoft Corp., in Redmond, Wash., can be reached at <http://www.microsoft.com/>.

Clare Haney is the Hong Kong bureau chief for the IDG News Service, an InfoWorld affiliate.

REGULATORY ROUNDUP

A look at the regulatory implications of the MCI-WorldCom merger



WASHINGTON AND BRUSSELS, BELGIUM

The proposed merger between **MCI Communications and WorldCom** shouldn't hit many regulatory hurdles, said analysts and industry insiders.

"I don't anticipate problems on that deal, largely because they're not really jeopardizing any universal service issues," said Dan Taylor, an analyst at the Aberdeen Group, in Boston.

Regulatory bodies are especially sensitive to telecommunications business deals which threaten universal service — the concept that anyone anywhere should have access to phone service — but because MCI and WorldCom are long-distance carriers whose presence in the local area is primarily through leased lines, their ability to threaten universal service is small, Taylor said.

Another analyst said any opposition to the merger is likely to come from their perceived dominance as Internet backbone providers.

MCI has only had between 20 percent and 20 percent of the voice market, and WorldCom has significantly less, according to Christine Heckart, an analyst at TeleChoice, in Verona, N.J.

"The exception is the Internet market, where you could argue that [WorldCom subsidiary] UUNet] was number one and WorldCom was number two," Heckart said. However, even that argument is unlikely to persuade regulators to block the deal, because there are plenty of other backbone providers, she added.

Meanwhile, a European Commission source, who asked not to be identified, said last week that the Commission is unlikely to block the deal.

"After an initial glance at the merger, we doubt that we will have any major problems with it," the source said.

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Network hardware

Extreme links gigabyte switches

By Stephen Lawson

EXTREME NETWORKS last week introduced a connecting hub that will allow users to link as many as eight of the company's gigabit-speed routing switches and use them as a single device.

The company's Summit Virtual Chassis will act as a core switching fabric for stackable switches with 10Mbps, 100Mbps, and 1000Mbps Ethernet interfaces. Enterprises will be able to link Summit 1 Gigabit Ethernet switches and Summit 2 10/100Mbps devices over distances as great as 280 meters, according to company officials.

Eight Summit 1 switches con-

nected using four Summit Virtual Chassis in a meshed configuration will have a total capacity of 64Gbps and will forward as many as 48 million packets per second.

The stacking technology brings Extreme into the upper class of Gigabit Ethernet vendors that have developed massive-capacity enterprise switches. Officials said Extreme's approach will let users start out with a relatively small investment in the company's products and later add capacity as their organizations grow or their infrastructure changes.

Distributing a switching platform across several switches in dif-

ferent locations can overcome the distance limitations of using a single chassis and linking it to workgroups throughout a building. The stacked switches are connected via a high-speed, pass-through link to the Virtual Chassis. The connection contains intelligence for recognizing the quality of service policies and other parameters.

According to company officials, a meshed stack also can provide redundancy and load-balancing among the switches. The linked switches can be managed as a sin-



gle device using the ExtremeWare management software, and they will act as a single router hop in a network topology.

Analysts said large organizations are trying to limit their own risk in using new technologies such as Gigabit Ethernet and Layer 3 switching, and Extreme's stacking capability will let users gradually build this new type of infrastructure.

"It shouldn't be that difficult to evolve this into a big switch," said Melinda LeBaron, an analyst at Gartner Group, in San Jose, Calif. "You've already got a lot of the fundamentals there."

The Summit Virtual Chassis will ship in January and will carry a list price of \$8,995.

Extreme Networks, in Cupertino, Calif., can be reached at (408) 342-0999 or <http://www.extremenetworks.com>.

INTEL SWITCHES WILL SCALE UP TO A FAST STACK

By Stephen Lawson

INTEL LAST WEEK introduced a line of 10/100Mbps switches that can be linked together to provide greater scalability for connecting workgroups.

The first model in the Intel 500 series switch line is the Intel Express 510T, which is equipped with 24 autosensting 10/100Mbps ports, and two expansion slots.

Using one expansion slot in each switch, users can link two of the switches together to create a single 48-port device with a shared switching capacity.

Future products in the 500 line, to be introduced early in 1998, will allow a stack of as many as seven switches, according to company officials.

Other expansion modules for the 510T will include a four-port 10/100Mbps interface, a fiber-based 10/100Mbps interface with two ports, and a one-port Gigabit Ethernet module set to ship in the first quarter of 1998.

When fully configured with 10/100Mbps ports, a stack of seven switches would form a 196-port device.

Intel's management software for the 500 series provides a choice of Windows-based and Web-browser interfaces. ActiveX controls used with the browser interface can provide a view of the device and the capability to generate performance graphs in real time.

One analyst said the Intel 500 line products are focused on lowering the cost of setting up Fast Ethernet networks without sacrificing the flexibility of those networks.

"They're trying to provide the low-cost, buy-in factor with the flexibility you get with a modular system," said John Armstrong, an analyst at Dataquest, in San Jose, Calif. "It's not just a 'pile-able.' It can really be scaled up."

Pricing for the 510T, at \$4,775 or \$199 per port, is very competitive, Armstrong said. Early this year, Bay Networks reached a new pricing low in the autosensting 10/100Mbps switch market with a \$250-per-port, 16-port switch.

The 510T is scheduled to ship at the beginning of December; the Stack Interface Module is scheduled to ship in February, 1998, for \$299.

Intel Corp., in Santa Clara, Calif., can be reached at (800) 538-3373.

Banyan eases Net access

Gateway, server leverage StreetTalk

By Emily Fitzloff

BANYAN SYSTEMS is scheduled to announce this week two products that are designed to ease access to mainframe applications and the Internet.

Both products, the Relay/Gold 3270 Gateway and the Relay/Gold Web Server, are Windows NT-based and tightly integrated with Banyan's StreetTalk directory service.

The Banyan Relay/Gold 3270 Gateway is a Systems Network Architecture (SNA) gateway engine for connecting clients with IBM mainframe applications.

According to Mike Wixon, senior director of product management at Banyan, Relay/Gold 3270 Gateway "is essentially a thin client for the mainframe."

The Relay/Gold 3270 Gateway leverages the latest release of Banyan's StreetTalk directory service and the security and administration functions of the Banyan Vines networking environment. Wixon said the product "enables customers to expand their SNA networks via a single point of management from their StreetTalk servers."

Banyan's Relay/Gold Web Server, also introduced this week, brings integrated access to mainframe applications via any standard Web browser.

According to company officials, the server enables users to connect via a company intranet to mainframe systems without needing additional configuration or client software.



THE RELAY/GOLD WEB SERVER is designed to bring mainframe applications into the Web age.

According to Wixon, both the Banyan Relay/Gold 3270 and the Relay/Gold Web Server were developed in conjunction with Banyan's strategic partner, Relay Technology, which is a provider of host-communication and mobile technologies.

Both the Relay/Gold 3270 Gateway and the Relay/Gold Web Server operate on Microsoft's Windows NT server and the Gateway product requires access to a StreetTalk directory service.

Both products are scheduled to ship in December; pricing for each begins at \$1,495 per server.

Cost per 50-user client-access license for Banyan's Relay/Gold 3270 Gateway begins at \$4,995.

Cost per a 50-concurrent user license for Banyan's Relay/Gold Web Server starts at \$9,995.

Banyan Systems Inc., in Westboro, Mass., can be reached at <http://www.banyan.com>.

VLSI chip incorporates all mobile-telephony standards

By Andy Santoni

VLSI TECHNOLOGY has introduced a single, low-power chip designed to let mobile-phone manufacturers simultaneously support multiple protocols.

The chip is designed to cut development costs associated with supporting different mobile-phone standards. It also allows manufacturers to support other technologies — personal digital assistants or Global Positioning System functions, for example. It was developed by VLSI's Communication Products group.

The chip, called OneC, will begin sampling early in 1998 and be available in volume during the second half, said Andreas Malzach, marketing manager for cellular products at the Communications Products groups, in Sophia-Antopolis, France.

Designed around VLSI's Communication Standard Platform, the chip incorporates a RISC ARM7 Thumb processor core and an Oak Technologies digital signal processor core. Surrounding this are building blocks that interface with display screens and keyboards — voice circuitry and radio-frequency circuitry for the transmitter and receiver, for example.

Another function block handles

signal processing that meets a protocol standard. The first OneC chip will support Global Systems for Communications telephony, with a Code Division Multiple Access function block available in about two months, Malzach said.

An equipment maker can choose a standard or purchase a chip that supports multiple standards, so a single product can be offered worldwide, Malzach said.

The standard ARM7 core at the heart of the OneC chip also can act as the heart of a highly integrated personal digital assistant, Malzach noted.

The OneC is VLSI's third-generation application-specific standard product, Malzach said. The first devices, introduced in 1995, offered 100-minute standby time and could fit on a printed-circuit board about 64 by 46 millimeters in size.

The second generation, introduced earlier this year, shrank board size to 48 by 44 millimeters and increased standby time to 250 hours. The small size and low power consumption of the OneC allows for a board only 45 by 35 millimeters and offers standby time as much as 500 hours, Malzach added.

VLSI Technology Inc., in San Jose, Calif., can be reached at (408) 434-3100 or <http://www.vlsi.com/>.

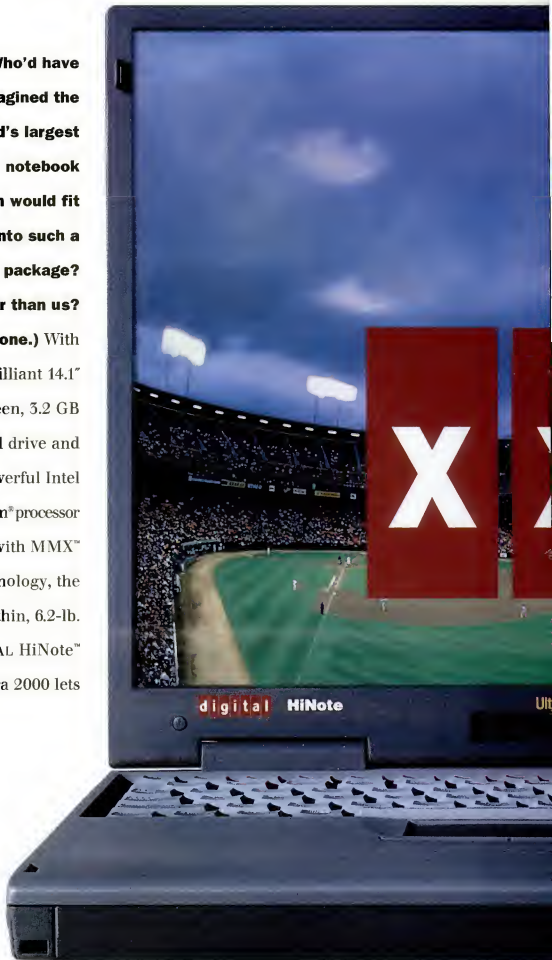


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Bay, 3Com announce latest generation of cable modems

■ Both will support MCNS standards

By Marc Ferranti and Nancy Weil
AT LAST week's Comdex trade show in Las Vegas, Bay Networks and 3Com separately announced plans to ship new cable modems.

Going after the burgeoning telecommuting market, Bay will release its Generation 4 Cable Modem, designed to provide higher speeds and greater reliability than the current product family, in the second quarter of 1998.

The Bay Networks cable modems, which are expected to cost less than \$200, boost the downstream data rate as high as 36Mbps, up from the current product's 10Mbps, officials said. The maximum upstream data rate remains 10Mbps, but forward-error correction and data-encryption capabilities have been added for greater reliability and security, officials said.

The cable modems integrate the Multimedia Cable Network Systems (MCNS) Data Over Cable Service Interface Specification protocols that are being adopted as standard for access and radio-frequency protocols for multimedia and two-way data services.

The cable-modem family is aimed at applications including

Web access, virtual private networks, and a range of IP services.

The modems will be offered through cable-television providers, at least initially. When data services

via cable becomes more widely deployed, cable modems will be offered through retailers, Bay Networks officials said.

3Com officials said their company will soon be shipping telephone-return cable modems and head-end equipment that also conform to the MCNS specifications. The cable

modems are expected to be available by early 1998.

3Com officials said the company's U.S. Robotics Cable Modem VSP and VSP Plus will interoperate between different cable systems, and they will be upgradable to handle the evolving specifications in this area.

"The way I look at it is that it's fundamentally changing the existing business models in the cable industry," said Levent Gun, vice president of 3Com's cable-access division.

"These modems are very easy to install. They are plug-and-play," Gun said. "Our engineers actually install them in 5 minutes. People

who are not 'techies,' they were able to install this in under 15 minutes...It's all automated. That's been one of our design goals."

The head-end equipment that 3Com will offer cable companies will allow them to manage cable modems and serve as ISPs.

The VSP is expected to sell for about \$199 and the VSP Plus for \$249. 3Com officials also expect to release two-way modems conforming to the MCNS specification early in 1998.

3Com Corp., in Santa Clara, Calif., can be reached at (408) 764-5000 or <http://www.3com.com/>.

Bay Networks Inc., in Santa Clara, can be reached at (408) 988-2400 or <http://www.baynetworks.com>.

Marc Ferranti is the New York bureau chief for the *IDG News Service*, an InfoWorld affiliate. Nancy Weil is a Boston correspondent for the *IDG News Service*.

Multimedia messaging

Zap lets users add video to e-mail

By Dana Gardner

ZAP INTERNATIONAL used Comdex last week in Las Vegas to launch Zap Video Email, a new technology for attaching video and audio "clips"—and the client software needed to access them—to e-mail messages. The product is being pitched for face-to-face messaging, or training and demonstration applications.

The Zap Video Email system includes a color camera, PCI camera-interface board, and the Zap Video Email application software, which consists of a recorder and player.

With the recorder application, users can see themselves on screen as they record an audio or video clip. The sender also can then enter as many as 64 characters of text to aug-

ment the multimedia message.

Recorded clips can be replayed, discarded, or compressed. When finished, the clip is saved to disk and can be attached to any Internet-based e-mail.

During the compression process, however, the player application is also embedded into the clip so that any receiver using Windows 3.1- or Windows 95-based Internet e-mail need not worry about having the software installed to view and hear the messages, explained Ken McEwan, Zap president and CEO.

Pricing information for Video Email was not available.

Zap International Inc., in Los Gatos, Calif., can be reached at (888) 445-9440 (toll-free) or <http://www.zap.com/mail/>.

Cisco anticipates a buyers' boom in 1998

By Kristi Essick

A FEW YEARS AGO, networking giant Cisco Systems would have left Comdex to the computer vendors, but in the age of the Internet, Cisco's bread-and-butter products—routers, hubs, and switches—will be at the core of how all electronic devices interconnect in businesses and homes, said John Chambers, president and CEO of Cisco, in a keynote speech at the Comdex trade show in Las Vegas last week.

Cisco is forecasting \$15 billion to \$20 billion worth of sales by the year 2000 as businesses, homes, and schools hook up networked PCs and other devices to the Internet, Chambers said.

"The Internet will change the way we live, play, work, and learn," Chambers told a large crowd of attendees. Not only are businesses realizing the need to network with suppliers, partners, and customers, but home users and education officials also are ready to cash in on the networked world, he said.

The way forward for Cisco, Chambers said, is to form partnerships with computer manufacturers, semiconductor companies, software developers, and electronic-device manufacturers to make sure all hardware devices can connect to the Internet and to each other.

The company has made little secret of which side it stands on, choosing alliances with Intel, Microsoft, and Hewlett-Packard. However, this does not mean Cisco will make products that only operate with the Windows/Intel plat-

form, Chambers said. Connecting "unbelievably complex" networks based on heterogeneous hardware and software is Cisco's specialty, he continued.

"The more complex the networking market is, the better off we are," Chambers said.

Companies that don't understand the importance of being networked to customers and business partners will suffer in the coming years, Chambers said. Traditional retailers must rethink the way they do business by offering value-added services to customers who actually come into the store instead of buying products online, he added.

And it isn't just businesses that need to put a lot of money and energy into networking. Educators need to connect schools' machines via the Internet, Chambers added. Cisco, for its part, is pushing its Network Academies program that teaches high-school students to install and maintain Cisco hardware.

And home users will not be far behind schools, Chambers said. Many homes already have more than one PC and the explosion of home Internet devices, such as set-top boxes and network computers, will only complicate matters, he said. Users will want to network together all of the devices, with one source of high bandwidth shared by all of the machines, he added.

But Cisco is not content to rest on

its laurels, Chambers said. The company views Bay Networks, 3Com, and Cabletron as formidable competitors, he said.

"We're the kind of company that makes [CEO and president of Intel] Andy Grove's paranoia look relaxed," adding that he is not satisfied with Cisco's pace of growth and progress in any realm. To be more successful, Cisco will need to become more nimble and quicker at getting its products on the market, he said.

One attendee was convinced by Chambers' vision. "My boss wanted me to come back with a marketing

plan, and I found it. The Internet is it," said Janine Schlador, a senior account manager at Aries Technology, a computer manufacturer in Tempe, Ariz. Chambers really drove home how important the Internet will be for business, she said.

However, another attendee was less than thrilled with Chambers' Internet-lauding speech.

"I didn't think anything he said was very new," said Robert Frommel, an intranet developer at the Swedish Post, the Swedish national postal carrier, in Stockholm, Sweden. "I had heard it all before and was a bit disappointed."

Cisco Systems Inc., in San Jose, Calif., is at <http://www.cisco.com/>.

Kristi Essick is a London correspondent for the *IDG News Service*, an InfoWorld affiliate.

IBM readies planning software

By Dan Briody

IN AN ATTEMPT to aid the transition to thin-client computing, IBM plans to release a software package in 1998 for capacity and performance modeling that will project a company's network requirements.

Big Blue has big plans for its thin clients during 1998, and although the network-computing concept has come a long way since 1996, the company concedes that it still has a way to go.

"We think we did a good job last year of letting people know about network computing," said Bob Dies, general manager of the network computing division at IBM. "But it is still a new concept, and people still don't understand. A lot of people just think they know. Many don't even know that the Network Station will run Windows applications."

Many companies require extensive capacity and performance

modeling before they can even consider implementing a server-based network. IBM or some other global services company is often called in, resulting in lengthy and expensive evaluations of the existing network, according to Dies.

IBM plans to release the software in the first quarter of 1998 to automate that process, eliminating the services fees.

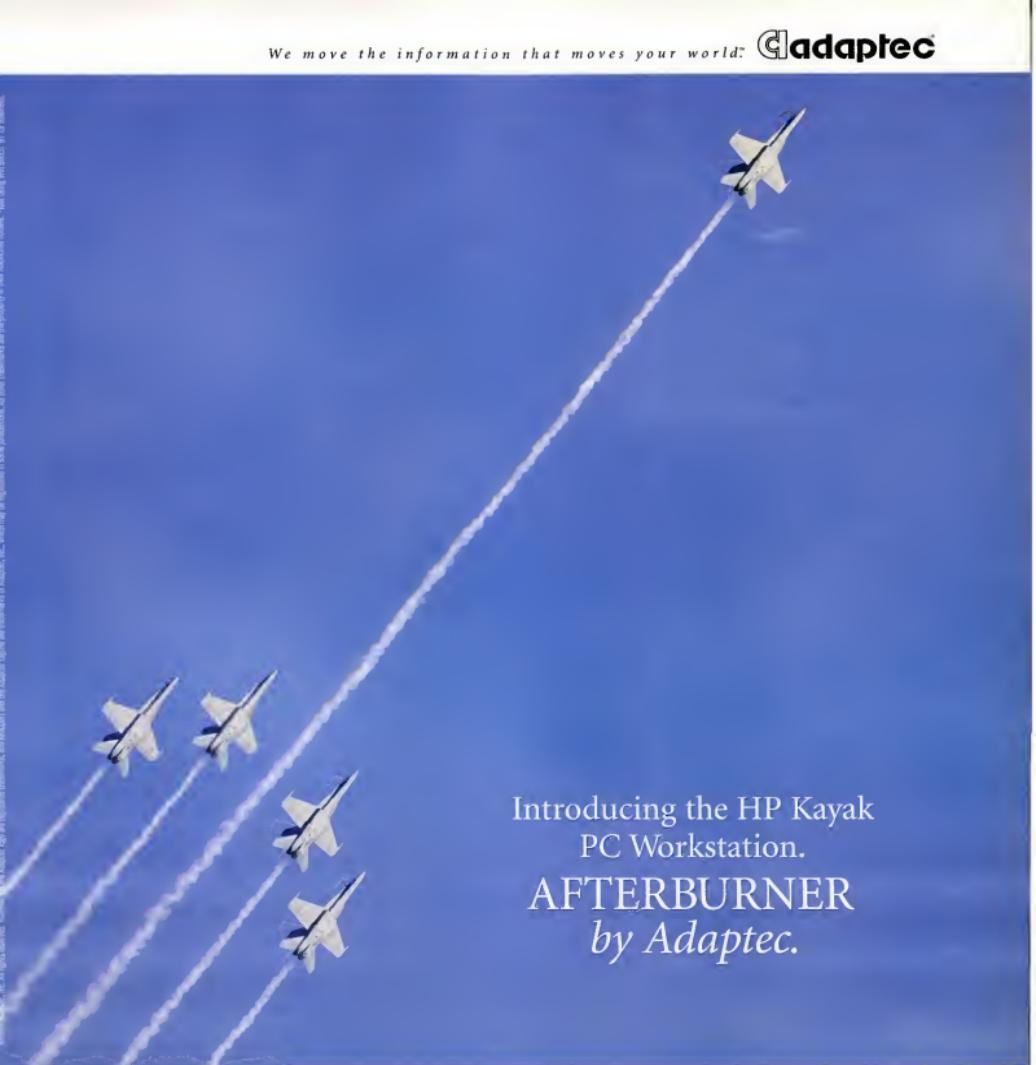
"We want to do analysis and projections in software, rather than calling in our services group and charging for it," Dies said.

Dies likened the software to a service IBM currently offers on its Web site that allows IBM's partners to enter into the current network configuration and then the desired configuration.

The service will alert them to high-, medium-, or low-level risk spots on the network.

IBM Corp., in Armonk, N.Y., is at <http://www.ibm.com>.

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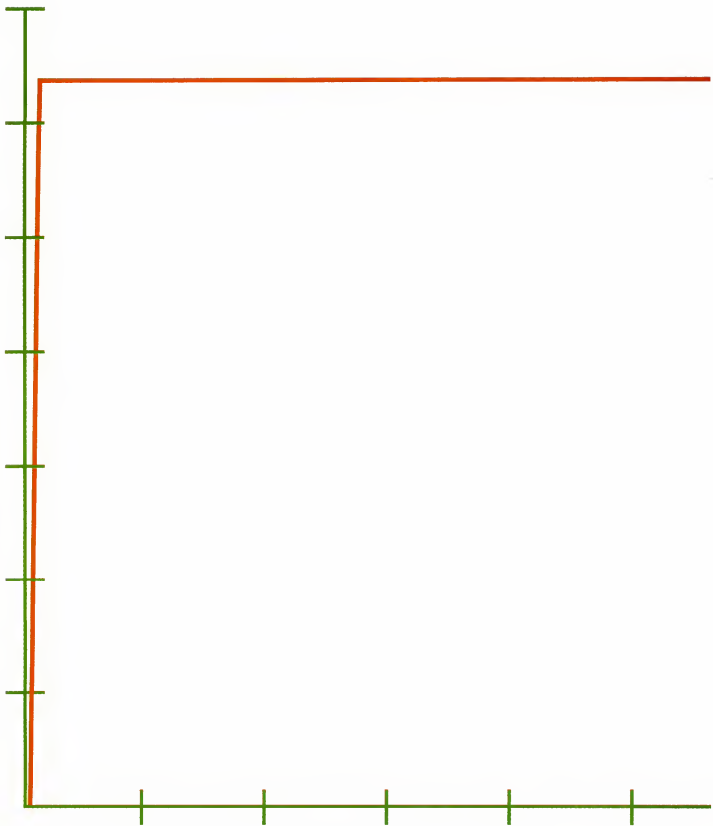


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Europe may overhaul regulatory structure

By Elizabeth de Bony

THE CONVERGENCE of the telecommunications, audiovisual and information technologies industries will require a sweeping revision of Europe's regulatory framework, according to an initial text of a European Commission discussion document obtained by the IDG News Service, an InfoWorld affiliate.

The European Commission is tentatively scheduled to approve the document, a green paper entitled "On the Regulatory Implications of the Convergence of the Telecommunications, Audiovisual and Information Technology Sectors," at a meeting this week.

The Commission also is expected to call on all interested parties to send their comments within a four-month review period. However, this target date for approval could slip, sources suggested.

At stake is the future competitiveness of the converging sectors. Convergence creates reg-

ulatory problems because it enables different types of networks to carry essentially similar services, and "maintaining current regulatory divisions would mean that services would be regulated according to the method of their delivery, with inevitable inconsistencies and market distortion," the paper stated.

Although the final draft could differ substantially from the current text, the message will undoubtedly be much the same: It will urge the European Union to adopt as light a regulatory load as possible, relying wherever possible on fair and open markets to achieve policy objectives.

"The regulatory framework should concentrate on encouraging innovative consumer services by giving priority to competition in retail markets," the paper stated.

But having delivered this welcome message, the paper then suggested a "layered"

approach to regulation with new rules for value-added services, such as Internet commerce and financial services, on top of existing regulations that concern the networks or "conveyance" mechanisms for such services. This layered approach "appears to offer the best solution to the problem of inconsistent regulation," according to the Commission.

Identifying the Internet as "the prime driver of convergence," the paper describes the phenomenon of convergence, examines the regulatory quagmire that could be just around the corner, and sets out questions that interested parties should answer when commenting on the debate concerning the regulatory framework.

Elizabeth de Bony is a Brussels, Belgium, correspondent for the IDG News Service, an InfoWorld affiliate.

► The telecommunications, audiovisual, and information technologies industries represented a \$607 billion market in Europe in 1996.



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ProGra Technology (714) 566-9200

Quantex Microsystems (800) 776-9000

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Tech Data (813) 539-7429



First speech-recognition e-mail announced

By James Nicolai

AT LAST WEEK'S Comdex in Las Vegas, Wizzard Software launched VoiceMail, which the company claims is the world's first e-mail application to include speech-recognition technology.

The company also announced plans to create an intelligent agent that will allow Windows 95 users to verbally instruct their PCs to perform tasks such as sending faxes and opening applications.

Wizzard is taking advantage of the steady advances that companies such as IBM and Dragon Systems have made in speech-recognition technologies, which now require less processing power and memory to run well, said Chris Spencer, CEO of Wizzard.

VoiceMail allows users to create, compose, and send their e-mail by speaking into a microphone headset. Addressing mail and making editing changes must be done with a mouse or keyboard.

Although other software lets users cut and paste speech-generated documents into e-mail messages, only Wizzard enables a user to directly dictate an e-mail, Spencer said.

Currently, VoiceMail supports only discrete voice recognition, which means that words must be spoken separately and not in a continuous stream, as in natural speech. But users still can dictate 75 words to 80 words per minute. The company will enable all of its products with continuous speech starting in January, beginning with an upgrade to the U.S. English version—the only language that is currently available—and a version for U.K. English, according to Spencer.

Discrete recognition is "more accurate but a little less natural" than continuous speech, Spencer said. VoiceMail is accurate 97 percent of the time, he added.

Like other voice-enabled products, users can "train" the software to recognize their dialect by reading a prepared passage into the PC. The product is targeted at home users and small offices, although one user attending a demonstration of the product questioned its viability in an office environment.

"It makes more noise to talk than to type; if everyone's talking you can't hear yourself think," said Tom Goodman, a sales manager at Nippon Steel Semiconductor.

VoiceMail for Windows NT and Windows 95 requires a 90-MHz Pentium chip with 16MB of RAM.

The retail price is \$49.95. Continuous speech versions for Japanese, Chinese, Dutch, and German will be released in 1998 at a rate of about one per month, Spencer said. The planned agent, scheduled to ship Feb. 15, is

based on a voice-enabled version of Microsoft's Agent, which the company recently made available to developers, Spencer said.

Microsoft's voice-enabled help agent will be activated by calling a nickname, and it appears on a user's screen in the form of a hovering animated genie.

"So you can say, 'Freddie, fax me a copy of this document,' and the machine will do it," Spencer said.

The application can be programmed using Visual Basic, C++, or Java, Spencer said. It will be a continuous recognition product and therefore will require a 200-MHz Pentium and 32MB of RAM, he said. Pricing has not yet been set.

Wizzard Software Corp., in Pittsburgh, can be reached at <http://www.wizzardsoft.com>.

James Nicolai is a San Francisco correspondent for the IDG News Service, an InfoWorld affiliate.

Sharp joins Alcatel in satellite project

SHARP IS TO TAKE an active role in a broad-band satellite project led by France's Alcatel Alsthom SA, having invested an undisclosed amount in the undertaking, a Sharp representative said last week.

Osaka, Japan-based Sharp, a leading maker of portable devices, will manufacture terminals, handsets, and solar cells for use on the Alcatel project, called SkyBridge, according to the representative.

Alcatel and Sharp have also agreed to co-develop interfaces for the terminals, the Sharp representative added.

The SkyBridge system, which is scheduled to begin service in 2001, will use 64 low-earth orbiting satellites to deliver a range of duplex services, including Internet access to videoconferencing, according to the companies.

The system will offer downstream band-

width of as much as 60Mbps and a maximum uplink speed of 2Mbps, according to the companies.

Other investors in the SkyBridge project include Loral Space & Communications and Toshiba.

Sharp reported revenues of 674.6 billion yen (\$5.4 billion) for the six-month period ended Sept. 30, an increase of just more than 1 percent from the same period one year earlier. Operating income dropped to 20.7 billion yen, 27.6 percent less than the six-month period ended one year earlier.

Alcatel Alsthom SA, in Paris, is at 33 (140) 761 010 or <http://www.alcatel.com/>. Sharp Corp., in Osaka, can be reached at 81 (662) 530 07 or <http://www.sharp.co.jp/>.

— Rob Guth, IDG News Service (an InfoWorld affiliate), Tokyo



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COMPAQ

Lucent's Inferno 2.0 unveiled

■ Operating system manages and updates applications

By Elinor Mills

AT COMDEX in Las Vegas last week, Lucent Technologies unwrapped its Inferno 2.0 network operating system.

The technology is intended for small consumer devices, and comes with a graphical user interface for managing applications, as well as a software download application for updating application and system software.

Packaged with Inferno 2.0 is a suite of general-purpose productivity applications including an e-mail application, a phone directory address book and a notepad.

The new version of Inferno runs applications that are written in the PersonalJava programming language, a subset of Java designed for network products that have displays but that might not include a keyboard or mouse (such as screen phones and set-top boxes).

Inferno 2.0 also runs applications written in Limbo, Inferno's portable programming language.

Lucent recently completed work with selected licensees to support smart phones that integrate telephony and advanced data capabilities, such as browsing information on the Internet while talking on the phone. Lucent's partners are a diverse range of companies using Inferno for many different applications. They include:

- Neo Networks, based in Minneapolis, which is incorporating the technology into its StreamProcessor system for updating network address tables across corporate intranets and the Internet.

- CyberExpress, in Edison, N.J., is incorporating Inferno into its flagship CE2000 language translation product, which allows users to browse the Web, retrieve informa-

tion, Web cast, and chat—all in the user's native language.

- Tatung, in Taipei, Taiwan, is using Inferno as the operating system for its Internet set-top box.

► More than 60 original equipment manufacturers and independent software vendors have licensed Inferno 2.0.

The entire native Inferno software, including basic applications, can run on as little as 512KB of RAM and 256KB of ROM. Inferno 2.0 also is compatible with software modem technology so users do not need modem hardware.

Evaluation copies of the Inferno 2.0 Development Kit are available at <http://www.lucent.com/inferno/>.

Lucent Technologies Inc., in Murray Hill, N.J., can be reached at (908) 582-8500 or <http://www.lucent.com/>.

Elinor Mills, in San Francisco, is online editor for the IDG News Service, an InfoWorld affiliate.

Companies propose infrared connectivity standard to IRDA

By Elinor Mills

MICROSOFT, Hewlett-Packard, Intel, and Sharp have proposed a standard for infrared transmissions by wireless devices, the Infrared Data Association (IRDA) announced last week.

The companies revealed they have been granted draft status for their IrBus proposal, which meets the IRDA's bidirectional command and control-market requirements.

The IrBus specification is designed to allow wireless use of peripherals such as mouse, keyboard, joystick, remote-control unit or personal digital assistant with PCs and two-way consumer electronics devices and home appliances such as set-top boxes.

Supporters of the IrBus specification are said to include Acer Laboratories, Alps Electric, KeyTronic, Logitech, Matsushita Electronic Components and Philips Remote

Control Systems.

The IRDA says IrBus works with up to eight peripherals simultaneously communicating with at least two hosts; provides quick response for real-time applications such as mouse control; covers a distance of 24 feet; transmits data at 75KBps; and has a lower cost of implementation than alternatives such as using radio frequency.

HP and Sharp are prototyping infrared transceiver modules that will meet the physical layer requirements of the developing specification that is expected to be commercially available by the middle of 1998.

General information on IrBus can be obtained at <http://www.irbus.org/>.

Elinor Mills, in San Francisco, is online editor for the IDG News Service, an InfoWorld affiliate.

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And while Global Village shipped the industry's first 56K Modem/Ethernet PC Card last June,



Megahertz is still pushing a dead-end 33.6 version that's not software upgradeable to 56K, and an expensive "CardBus" version that might not even work with your notebook.

Surprised? Then think Global Village. Priced about the same as many 33.6 Modem/Ethernet PC Cards, the Global Village 56K Modem/Ethernet PC Card features genuine Rockwell K56flex technology for downloads up to twice as fast as 28.8 modems.* And because all Global Village 56K modems are



software upgradeable to the forthcoming ITU 56K standard, your investment is protected.

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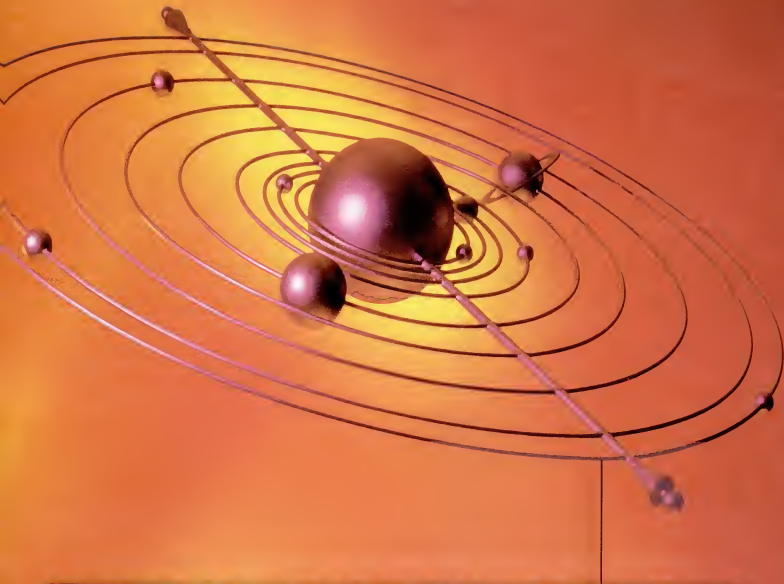
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► Network-management suite

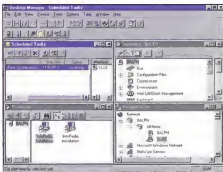
LANdesk upgrade extends toolset and training time

By Mike Avery

INTEL'S LANdesk Management Suite (LDMS) 6.0 is pretty much the mother of all management suites — offering software and hardware inventory, software metering, remote control, and multiplatform support in one sprawling package. LDMS fans will like the improvements, which include a streamlined console, although they will have to overcome a formidable learning curve.

But other network administrators may be put off by LDMS's massive system requirements, limited platform independence, and system interactions and dependencies. Both Hewlett-Packard's Norton Administrator for Networks and Norton Administrative Suite packages (formerly sold by Symantec) outperform LDMS in these areas.

Other managers, particularly those in small to midsize shops, would be wise to define their needs and then look at available stand-alone products, such as LANovation's LANescort or On Technology's SoftPack and AuditTrack products.



LDMS CLIENT AGENT allows you to look deep into your client PCs. This image shows how this node has set up the remote-control package.

I was struck by LDMS's steep system requirements; all that functionality calls for a lot of juice. Intel recommends Pentium II processors, stipulating Pentium Pro machines as a minimum. The company isn't just trying to boost sales of its top-end CPUs, either. In my tests, the 133-MHz Advanced Micro Devices 5x86 processor in my Windows NT server was just not fast enough.

Intel also wants the core server, which handles the databases, to provide at least 128MB of RAM and 1GB of free disk space. It also suggests that you not use the domain controllers as core servers.

LDMS uses ODBC drivers to access its database. In small systems, you can use the default Microsoft Access database, but a SQL server would be more appropriate. This means upgrading the core server or adding another server to act as the SQL server.

At this point, you are looking at a substantial hardware investment. In a large shop, the hardware costs of setting up LDMS are minimal. But to a smaller shop, the costs would seem greater.

Cleaner console

Intel has retained many of the best parts of LDMS 2.52. To my relief, the new console has become somewhat simpler than the Version 2.52 console. Still, the console could get cluttered, even though I found the ability to handle many tasks with its drag-and-drop capabilities very convenient.

Intel has also dropped its antivirus package from LDMS, although it still offers the software alone and in other packages.

The remote-control package proved itself smooth, quick, and stable. The client agents let me look

THE BOTTOM LINE



LANdesk Management Suite 6.0

This powerful package offers administrators a plethora of features that enable it to manage almost any network.

- **Pros:** Software and hardware inventory; software metering; remote control; multiplatform support.
- **Cons:** Very high system requirements; rough installation; software interaction problems; formidable learning curve.
- **Intel Corp.,** Santa Clara, Calif., (800) 538-3372; <http://www.intel.com/intel/software/itools/ldms.htm>.
- **Price:** \$6,250 for 100 nodes. Upgrades available at half price.
- **Platforms:** Core server: Windows NT 4.0 with Service Pack 3; Service Center servers: Windows NT 3.51 or 4.0, NetWare 3.12, 4.1, or 4.11; managed clients: MS-DOS 6.22 or later; Windows 95, Windows NT Workstation 3.51 or 4.0, OS/2 4.0 or later.

deep into the PCs. The automatic inventory was easy to use. The software-distribution system made it easy to create installation and removal packages, and to use push,

- **netViz 3.0 Professional**...\$28
- **SupportMagic, Enterprise Edition 4.0**...\$628
- **Explorer 2.1 and Surveyor 2.2**...\$620
- **Loose Cables**...\$29

WIRZBLIKE NETVIZ

It may be aimed at network managers, but netViz 3.0 Professional is a remarkably flexible data-modeling tool that lets you visually represent just about any kind of data — from decision-making flow charts to any size corporate network. See our review on page 62B.

HIGH-SPEED ANALYZER

Shomiti's newest offerings — Explorer 2.1 and Surveyor 2.2 — make analyzing network traffic a high-speed adventure by enabling full wire-speed capture. See our review on page 62D.

TALK BACK

Questions, comments, kudos? Send a message to sarah_vamey@infoworld.com. Include "Talk Back" on the subject line. To reach a staff author, use the format firstname_lastname@infoworld.com.

pull, or force options on the distribution. Software metering offers a plethora of options that I'll still be pondering weeks from now.

► **LDMS page 62F**

► Bandwidth-management solution

Venturi proxy server speeds data through clogged network pipes

By Victor R. Garza

FOURELLE SYSTEMS' Model 200 Venturi Compressor offers impressive Internet compression for those IT managers who want to alleviate bottlenecks and traffic on their networks. Made for both the IT manager and ISP wanting to squeeze more data through their existing pipes to their remote or intranet users, the Venturi proxy is well worth your attention.

Fourelle's solution consists of a rack-mounted black box and a small client-software module. The box I tested contained a dual Pentium Pro system with 256MB of RAM. The client software works in conjunction with either Microsoft's Internet Explorer or Netscape's

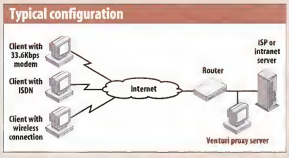
Navigator. This combination can impressively compress HTML and POP3 traffic.

Because Fourelle converses from the proxy to the client in User Datagram Protocol instead of IP, it cuts about 25 percent of the chatty traffic moving from the Web server to the client. The Venturi box then goes into high gear using its processors to compress the data. From the client's perspective there is also more responsiveness because the Venturi box caches both DNS information and frequently accessed Web pages. I didn't test the POP3 e-mail component but most of this traffic should also be highly compressed because it is mostly straight text.

Fourelle's strength lies in the fact

Venturi manages bandwidth with aplomb

The Venturi proxy increases performance by compressing HTML and POP3 traffic. Remote machines with the Venturi client software access the Venturi proxy and decompress the HTML or POP3 traffic on the fly.



that it has worked on compression problems with wireless networks for most of its existence. Fourelle currently is providing wireless compression for cellular digital packet data and other transports, an implementation that we will be seeing more and more frequently as our networks migrate from a land-based to a hybrid land-based/wireless paradigm.

Uneventful install

I connected the Venturi box I was testing to a 10/100Mbps switch on one side of my Ascend router along with my Web server. On the other side of the network, I connected another Ascend router, a hub, a network sniffer, and clients. I set up this connection to provide a virtual TI connection between the routers.

I proceeded to set up the Venturi proxy server from a browser client running on my Web server. I found it a very straightforward process consisting of just a few screens. I used the browser on my Web server to also check the estimated statistics on the traffic flow from Venturi as I requested data from my Web server.

On the client side, I installed the Venturi client software and then brought up my browser of choice to take a look at whether or not the installation had worked. It is incredibly easy to set up. In fact, I would call the Venturi client the epitome of transparent.

After installation, the client software required no maintenance or configuration; it just works. The client needs to be pointed to a Venturi proxy, and it also can be configured to optimize for different types of connections, from slow dial-up to Ethernet speeds, but this needs to be done only once.

I also connected via 33.6kbps to an outside ISP that had a Venturi box at its site, and I got very decent

► **VENTURI page 62F**

► Network-mapping software

netViz 3.0 lets users visually represent an impressive range of data

■ Point-and-click routines ease navigation and drilling down through mapped network diagrams

By Mark Joseph Edwards

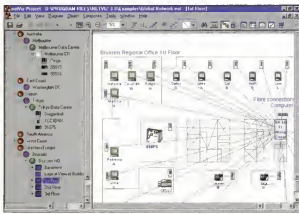
THIS WEEK marks the debut of netViz's netViz 3.0 Professional, an impressive network-diagramming and data-management package.

It is no secret that the human mind thinks better with pictures than with words or numbers, but how do you visually represent diverse sets of data and information? Use a tool like this one. Aimed primarily at network managers, netViz can just as handily map a particular part of your workflow or decision-making processes as it can map an entire network.

Diverse features, data sources

netViz boasts many top-level features, such as its capability to interface with various dispersed databases, publish information to a corporate Web site, and automatically discover network devices. However, it does not yet provide the many third-party plug-ins that extend Visio's network-mapping tool to areas such as hardware auditing and network design.

netViz's powerful database interface lets you bring together information from diverse sources, such as a spreadsheet and a SQL database, without needing specialized code. Via ODBC drivers, netViz can



NETVIZ can diagram and map almost any data type, such as this office floor plan, complete with workstations and hidden cabling layouts.

access data stored in any ODBC-compliant database, increasing the number of opportunities to visualize your data.

Publishing information

I was impressed by the variety of ways netViz can publish information. You can simply save data in its native format for easy viewing using the netViz Desktop Viewer. (You can distribute the Desktop Viewer freely, but it only lets users navigate and view the information; you must use the netViz editor to make changes.)

Second, you can save the data as straight HTML, which does not necessarily have to reside on a Web server. You can save the HTML to a drive on a network server. From there, you can navigate the netViz maps or drill down to any level.

Unfortunately, you can't access the data referred to by a map object, because that information is stored in a database that netViz does not export in this method. For example, you could navigate and drill down into a set of network maps, but you could not click on a server and see specific information about it.

Finally, you can publish to a fully Active Server Pages (ASP)-compliant Web server, such as Microsoft's Internet Information Server or Personal Web Server for Windows 95 and Windows NT. This way of publishing requires an ODBC- and SQL-compliant database.

Unlike the straight HTML method, the ASP method enables access to stored object data, because that information resides in an associated database on the Web server. netViz uses ASP technology to access the databases when navigating a map.

Automatic discovery

The capability to automatically discover network devices can save a lot of time when mapping a network. With some limitations, netViz can do this for systems on Novell NetWare and Windows NT networks. For instance, netViz will sometimes see a Windows 95 system as an NT system if that Win95 PC has file and print sharing enabled. In other cases, netViz may think an NT server running NetWare services is actually a real NetWare system and falsely report it as such.

netViz 3.0 relies on Microsoft's LANManager API calls to discover systems, so if you can't see a system in your Network Neighborhood,



netViz 3.0 Professional

Network managers will find this multi-faceted network-diagramming and data-management tool capable of mapping decision-making processes as easily as networks.

■ **Pros:** 2,000 graphic symbols; network enabled; Web-publishing enabled; free client-side viewer; diverse functionality.
■ **Cons:** Formidable learning curve compared with simpler products.

- **netViz Corp.,** Rockville, MD; (800) 827-1856, (301) 258-5087; fax: (301) 258-5088; sales@netviz.com; <http://www.netviz.com>.
- **Price:** \$589, professional version; \$379, standard version.
- **Platforms:** Windows 95, Windows NT.

chances are high that netViz won't automatically detect the system.

Although NetViz's support department reminded me that the software is not a network-management package, I still think netViz would benefit greatly by adding a simple TCP/IP-based method of detecting network systems, in

► NETVIZ page 62E

► Help-desk software

SupportMagic gains asset, inventory management

By Earl Greer

SUPPORTMAGIC, Enterprise Edition 4.0, has gained several important capabilities since I last looked at its predecessor, Magic Solutions' SupportMagic SQL 3.0. (See "SupportMagic SQL provides help where it's needed," June 3, 1996, page N/3.) This latest version gains purchasing and inventory capabilities and asset management that I found truly impressive. With these additions, the help desk now has the opportunity to become the nerve center of the organization.

I really got excited by the new integration with Intel's LANDesk Management Suite. (See review on page 62A.) With the help of an Intel technician, I installed the Intel LANDesk Workgroup Manager 1.1a

on my Windows NT 4.0 server and configured a Windows NT 3.51 workstation as a client.

Sitting at the server console, from SupportMagic I launched the LANDesk remote control and took over the client workstation. I simulated a chat session in which a help-desk technician worked with a remote customer to resolve a problem. LANDesk uses solid, mature technology, and help-desk staff using it from within the help-desk software are going to be able to resolve many more problems on the first call.

I loaded SupportMagic on both



INTEGRATION WITH INTEL'S LANDESK allows a help-desk agent to chat with the remote customer to resolve problems without leaving the help-desk software, as shown here.

a Windows 95 PC and a Windows NT 4.0 server. There was no noticeable difference between these implementations, although Norton's Utilities' System Information

revealed that the Windows 95 installation, at least, is still a 16-bit application.

Easier installation

I immediately noticed that an uninstall utility had



A SCROLLING MARQUEE around an image of the screen on the remote client shows the troubleshooter is directly controlling the client workstation without leaving SupportMagic.

been added. And the installation process now warns when it modifies the Autoexec.bat. A new database of test data makes it far easier to evaluate or learn to use the software.

I installed the data into a Sybase SQL Anywhere database, which is the only database included on the distribution CD-ROM. Support for Oracle is available, and the Enterprise Edition adds support for Microsoft SQL Server, Version 6.5.

Other minor though still helpful improvements make life easier within the product. For example, some windows now have a sum icon that provides a handy total of records in the window.

But the addition of tabs at the bottom of several windows is a significant organizational improvement. For example, the Problem

► MAGIC page 62E

To an IT manager, this is a pin-up.

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► Network packet analyzer

Shomiti upgrade shines with full-duplex 100Mbps

■ Allows for full wire-speed capture

By Stuart McClure

THE USE of high-speed Ethernet, such as 100Mbps in the enterprise, continues to increase each year, but unfortunately the tools to support these technologies are always a step behind.

Even today, as the hype surrounding Gigabit Ethernet gets louder, there are still very few solid tools out there that allow you to analyze these super-high-speed packets.

Shomiti Systems' Explorer 2.1 and Surveyor 2.2 are among the first packages aimed at helping network managers oversee a 100Mbps-switched Ethernet environment.

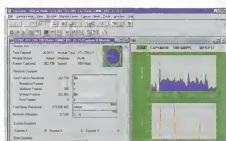
Shomiti's solution to high-speed

packet analysis is based on their hardware solution, dubbed Explorer. This box, along with its accompanying software, Surveyor, can monitor your 10/100 Ethernet network for both half-duplex and full-duplex streams. And unlike Network General's Sniffer, this box actually captures the entire stream at wire speed.

Further, the Sync module in the Surveyor now combines the two 100Mbps streams into one full-duplex capture, including all seven layers, with the packet

decode. This was a significant improvement compared with their previous solution, which kept each 100Mbps stream separate, requiring you to manually combine the two.

In my tests the Explorer box (and its accompanying tap) withstood bulk file copy tremendously well. Explorer and Surveyor managed to capture every byte of the 100Mbps-switched connection at full duplex.



YOU'LL FEEL LIKE a kid in a candy store with Surveyor's interface. The product is full of immediately valuable functionality, making the job of managing your network much easier.

But the product's high-speed capture is just the sample that gets you addicted.

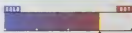
Among the Surveyor solution's other marquee pieces is its support for Cisco protocols, including CDP, DISL, EIGRP, and VTP. These full decodes are next to impossible to find in comparable packet analyzers, and they can be essential to troubleshooting any routing problems.

Surveyor offers a variety of RMON2-like information, including application-layer statistics and top-10 conversations. But don't take their marketing literature too seriously when it comes to RMON2 capabilities.

The company writes that the software "incorporates the full monitoring capabilities of an RMON2 probe." The product falls short of even providing all of the RMON groups, much less RMON2.

Shomiti also does not provide any decodes for SAP protocols. This could be a serious problem if you support a mostly SAP shop and need to troubleshoot a connection.

THE BOTTOM LINE



Explorer 2.1 and Surveyor 2.2

Shomiti lives up to its claim of wire-speed packet captures at its switched full-duplex 100Mbps. The hardware involved in obtaining this level of performance is not cheap, but this nonetheless may be just the ticket.

- **Pros:** Wire 100 full duplex; full decodes for Cisco protocols CDP/DISL/EIGRP/IGRP and VTP; packet generator, distributed control; Cisco VLAN breakdowns.
- **Cons:** No expert mode; no SAP decodes.
- **Shomiti Systems Inc.,** San Jose, Calif.; (888) 746-6484 (toll-free); fax: (408) 437-3940; sales@shomiti.com; <http://www.shomiti.com>.
- **Price:** Explorer: \$17,495 (full duplex), \$399 (top); Surveyor: \$1,595 (all modules).
- **Platforms:** Windows 95, Windows NT.

Stuart McClure (stuart_mccure@infoworld.com) is the enterprise platforms manager at the InfoWorld Test Center.

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netViz

Continued from page 62B

addition to its LANManager-based detection routines.

Versatile functionality

netViz contains all of the useful features you'll need to create comprehensive visual representations of your information. The software adequately handles almost any information type, from complicated workflow diagrams to complex floor plans and network topologies.

Although netViz cannot match Visio's third-party support, I found the software very powerful and relatively easy to use.

Network managers who have reached the upper limits of their current network-mapping software or find it unable to perform certain tasks should consider netViz 3.0 Professional. It's a great tool for visually representing just about any type of data.

Mark Joseph Edwards (mark@nshop.net) is a writer and network engineer/consultant for Houstopolis Technology Group in Houston.

Magic

Continued from page 62B

Open window has Help Desk Details, Work Orders, and Purchase Requests tabs at the bottom. This substantially reduces screen clutter and makes finding data fields easier.

Internet search

Purchasing and inventory are made easier by the concept of a standard configuration. This is a group of items purchased and installed as a group. For example, a help-desk agent can be empowered to initiate replacement of a CD-ROM drive for a PC with the justification that it is part of the PC's standard configuration. The purchase requisition can be generated from the help-desk call.

From within SupportMagic, I was able to launch an Internet search on a problem using my favorite browser. The neat feature here was that I could use a problem-resolution button to copy highlighted text from the Internet, filling in the problem ticket's resolution

field. This feature also can be useful in using Magic Solutions' Web add-on. (See "Magic Solutions' tool gains Web add-on," May 12, page 56H.)

Knowledge Paks quirk

While test-driving SupportMagic's fuzzy-logic search engine statistical information retrieval, I checked out ServiceWare's Knowledge Paks and ran into some trouble. The problem was that I had inadvertently removed the CD-ROM on which the Knowledge Paks were bundled. Replacing the CD-ROM solved the problem, but it would have been nice if I had been informed that it could not find the knowledge base.

SupportMagic is strategically positioned in the mid-tier of help-desk support products, roughly between eight and 24 users, and it supports both internal and external help desks. By aggressively adding features and teaming up with complementary product vendors, Magic Solutions is stretching the envelope, redefining its place in the competitive help-desk market.

Earl Greer is a senior network

THE BOTTOM LINE



SupportMagic, Enterprise Edition 4.0

By adding features and teaming with third parties, Magic Solutions has rapidly expanded the functions of its help-desk offering.

- **Pros:** Sophisticated integration with several third-party management products, including Inter's LANdesk Management Suite.
- **Cons:** No index to the manuals.
- **Magic Solutions Inc.,** Paramus, N.J.; (800) 966-2442; (201) 587-1515; fax: (201) 587-8005; <http://www.magic-solutions.com>.
- **Price:** Starts at \$5,995 for a one-user license.
- **Platforms:** Windows 3.1, Windows for Workgroups 3.11, Windows 95, Windows NT 3.51 and later, and OS/2, Version 3.

analyst at a large Texas state agency. His Internet address is egreer@fszefcc.dhs.texas.gov.



NETVIZ excels at mapping networks. This screen shows a top-level, globally spanned geographic network topology.



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LDMS

Continued from page 62A

Rocky installation

The LDMS installation proceeds from Internet Explorer. Before the smoke clears and the server is running LDMS, you will need to re-

boot it three times. Intel should strive to reduce or, better yet, eliminate, these reboots. To add to the joy, several times during the installation process the screen you need to view is obscured by other screens. So before you despair, look around a bit.

Installation also installs files on any NetWare servers on your network, so they can be inventoried and then report to the core server. You will not need to reboot the Net-

Ware servers during installation. I was delighted that LDMS recognized the NetWare 4.x log-in script. Most network-management systems still fail to modify the correct log-in script. Earlier versions of LDMS poorly modified the log-in script, putting the changes in odd places. Now LDMS puts them at the end of the log-in script and tells you to make the changes where you want them.

Once the installation was complete, the

nodes became unstable. They locked up, delivered General Protection Faults, had trouble finding DLLs, trouble booting, and more trouble shutting down. In the end, I used Innovative Software's Ghost to return the PCs to a known configuration and then reinstalled the Intel node software. This time things went much better. I have to assume that one of the Intel programs was having problems with one of the other programs I had installed. This interaction was a bit troubling, but it did go away.

Despite the improvements in the version of the LANDesk Management Suite, I think so much functionality would be overkill for many small and midsize installations. In those cases, network managers may well find the cure to be worse than the disease.

Mike Avery is a networking consultant in Beaumont, Texas, who has designed and supported networks of all sizes. He can be reached at mavery@mail.otherwhen.com.

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Venturi

Continued from page 62A

compression on all of my downloaded pages. Most of the time my download time was cut in half. I was getting about eight to one compression with all text Web pages, and I was duly impressed.

As with any product that offers compression, compression claims should be tested frequently.

I was pleased with Fourrelle's solution. I think that ISPs or IT managers wanting to provide better service and higher bandwidth over existing pipes could do a lot worse than going with the Venturi proxy.

Victor R. Garza is an analyst at the InfoWorld Test Center, specializing in telecommunications. He can be reached at victor_garza@infoworld.com.

THE BOTTOM LINE

Model 200 Venturi Compressor

Venturi is a compression hardware and software solution for both wired and wireless TCP/IP networks. It enables Internet and intranet clients to access HTTP and POP3 data at compression rates from 2:1 to 10:1.

- **Pros:** Extremely easy to install, speeds up connections using Microsoft's Internet Explorer and Netscape's Navigator; technology independent; works with 14.4Kbps, 28.8Kbps, and 56Kbps modems, both x2 and X2.56K, ISDN, frame relay, and multiple T-spans.
- **Cons:** Pricey.
- **Fourrelle Systems Inc.,** Santa Clara, Calif., (800) 565-9100, sales@fourrelle.com, <http://www.fourrelle.com>.
- **Price:** List price: \$23,500 for high-end unit with two processors, 512MB of RAM, and 792 concurrent client licenses; \$12,500 for low-end Model 100 with one processor, 128MB of RAM, and 250 concurrent client licenses.
- **Platforms:** Client uses a Windows 95 or Windows NT 3.51 and 4.0 browser.
- **Ship date:** Available now.



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LOOSE CABLES • TEST CENTER

Network General's Sniffer gets a keen sense of smell

FEW THINGS EXCITE US like a good network analysis (yes, we are sick), and Network General's Sniffer just keeps getting better and better. Some folks complain about Sniffer's interface, and we admit it's not exactly Bob-like. But this is a network-analysis tool, folks.

Sniffer's latest trick, database decoding, is

amazingly cool. Network General offers a decoding module for Oracle® databases and another for Sybase and Microsoft SQL Server databases.

Being able to see FTP, HTTP, and Telnet traffic is great, but actually being able to snoop on queries and responses from a data-



base server is a revelation. Troubleshooting database front ends just got a whole lot easier; if there's an error, you no longer have to figure out whether it's an application problem. Just haul out Sniffer, and see exactly what's happening between client and server.

Database decoding is the only application-specific decoding we've seen so far in a protocol analyzer, but we look forward to the day when sniffers can handle Notes decoding, messaging-server decoding, and all sorts of other application decoding. It shouldn't be long ...

—B.T.

Getting it Wright

Our recent reports on the InfoWorld Test Center's makeover generated a lot of mail asking for details on the client racks and the Apex Outlook video, keyboard, and mouse (VKM) switches we deployed.

We chose the Apex switches because they were the only ones that offered both on-screen menus and a broadcast feature at a price point of about \$1,000. The broadcast feature was crucial. It allows us to send keystrokes to all attached systems at once.

Also, the Apex switches don't require proprietary cables, which can add significantly to the cost of using a VKM switch. Finally, several readers were curious about possible degradation in video quality, but we're extremely satisfied with the output from these switches.

Regarding our client racks, we should first take care of some business. We misspelled the name of our supplier in the Nov. 3 column. For the record, it's Wright Line. Check out <http://www.wrightline.com> for a peek at the company's products.

We like the good-looking and functional Basic Plus racks, especially the panduits in back that help tidy up cables and cords. Because we were wrestling with so many wires, we custom-attached a second panduit to the racks ourselves, directly underneath the one that was built-in. Wright Line liked the idea and is considering adding a similar design feature to its line.

In fact, we have only one complaint about the company. We know "furniture" doesn't sound too sexy, but did they really have to dub their wares "technical environmental solutions"? Guess they did. Sigh.

—C.B.

What he won't call him

We've received a lot of suggestions for the name of the lovable mascot that graces this column every week, but we haven't christened him yet. Stay tuned.

For now, we'll share one entry that we don't expect to win but which amused us nonetheless. A reader suggested we call our cable-baby "Microsoft." That way, we'd have "at least one more excuse to mention the name in each issue." Ouch.

We never knew our bundle of joy would ignite such ire.

—C.B.

This week's Loose Cables contributors were Chip Brookshaw and Brooks Talley. Sniffed anything interesting? Let us know at loose_cables@infoworld.com.

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TeleQuality Associates
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Dr. Richard Leong, D.D.S.
Remote Access User

*Actual test results recorded on 14400bps 4.1 gbps line (1.375Mbps)

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InocuLAN AntiVirus Trounces McAfee And Norton.

LAN TIMES SCORECARD

	Cheyenne InocuLAN/ AntiVirus	McAfee Netshield/ VirusScan	Symantec Norton AntiVirus
Ease of use	5	4	5
Manageability			
Netware	5	2	2
Windows NT	4	2	2
Interoperability	4	2	2
Value	4	4	3
Average Score	4.4	2.6	2.7

Source: LAN Times July 21, 1997.
Score based on a 1-5 scale.



Why did InocuLAN® score so much better than the competition?

Because InocuLAN detects and cures more viruses. Period. And it offers both Office 97 Macros Virus and Internet/Intranet protection.

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clock and around the world for more than 95% of the Fortune 500.

And LAN Times isn't the only one who believes InocuLAN is the best. Hundreds of other leading companies know that when it comes to something as dangerous as viruses, you simply can't afford a solution that's second rate.

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Horiz. Pitch	0.22mm	0.22mm

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ANNOUNCED

QUALCOMM has cut the price of its Eudora Pro 3.0 Internet e-mail software client to \$29, about half of its previous \$59 price, as part of a holiday promotion that runs through Dec. 8. Eudora uses Internet standards and management tools to support multiple e-mail accounts from a single interface. It also features filtering capabilities to help automatically sort e-mail and offers security, virus protection, file compression, and attachment viewing. Eudora Pro 3.0 is available for Windows, Macintosh, and Newton platforms. Qualcomm Corp.: <http://www.qualcomm.com/>.

GRAPHON and **PROLOGUE SOFTWARE** are jointly developing software, code-named Go-Between, to provide interoperability and migration capabilities between Unix enterprises and the Microsoft multiuser Windows NT (code-named Hydra) system. Distribution and pricing for Go-Between have not yet been announced. Additionally, Graphon has signed a letter of intent to merge with Prologue Software, a Paris-based multiuser software company. Prologue Software: <http://www.prologue-software.fr>. GraphOn Corp.: <http://www.graphon.com>.

01 COMMUNIQUE LABORATORY has announced Communicate Pro, a communication software package for Microsoft's Windows 95 and Windows NT. Communicate Pro features communication tools including telephone answering and speaker phone, fax, Internet e-mail, contact management, and data communications. Communicate Pro also features Internet phone capabilities, a fax-on-demand option, contact history, and pager dispatching. Communicate Pro carries a suggested retail price of \$179 and will be available in December. 01 Communique Laboratory Inc.: <http://www.01com.com>.

TALK BACK

To contact Internet & I-Commerce section writers, send e-mail to firstname_lastname@infoworld.com.

INTERNET & I-COMMERCE

Will Microsoft get the last laugh?

■ Despite the uproar over its browser tactics, the software giant may prevail

By Dana Gardner

MICROSOFT MAY BE facing U.S. government scrutiny for the way it markets its Internet browser, but its tactics seem to be working.

Netscape's share of the Web browser market slipped in the third quarter, according to figures released last week by Dataquest (see graphic). Microsoft has clearly been the beneficiary, with its share nearly doubling in less than one year. If the trend continues at its current pace, Microsoft will reach browser parity with Netscape by mid-1998, according to Dataquest officials.

Dataquest, a market-research company, in San Jose, Calif., gathered its survey data over a seven-day period at the end of each quarter using browser hits on the

AltaVista search engine site.

Microsoft officials said the company's share is even higher than the Dataquest figures indicate. According to a survey the company conducted in October, its share equals 41 percent and Netscape's is closer to 50 percent.

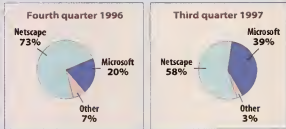
Netscape, long the leading provider of Web browsers, disputes both sets of figures, saying its share when measured more broadly is closer to 70 percent.

Netscape has been promoting its Web client and server software for use by businesses, but Microsoft has been pointing its browser at the potentially much larger consumer market, particularly through partnerships with Internet access providers and online services.

No matter how the figures add

Microsoft gains ground in browser wars

Netscape's Navigator loses share to Internet Explorer



SOURCE: DATAQUEST

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up, there is little doubt that Microsoft is succeeding with its policy of giving away the Internet Explorer browser, now in Version 4.0.

But Microsoft's plan to integrate its browser with its Windows operating system has prompted the U.S. Department of Justice to accuse Microsoft of violating a 1995 settlement on an antitrust charge.

Microsoft denies that the practice of bundling Internet Explorer with Windows operating systems violates the settlement.

Microsoft Corp., in Redmond, Wash., can be reached at <http://www.microsoft.com/>. Netscape Communications Corp., in Mountain View, Calif., can be reached at <http://www.netscape.com/>.

Microsoft ships FrontPage 98; users offer cheers and jeers

By Jeff Walsh

MICROSOFT IS NOW shipping FrontPage 98, a significant upgrade to its Web-site authoring and management tool.

Analysts say FrontPage 98, at a price of \$149, has a lot going for it. "It's very nicely done and reasonably priced," said Bob Enderle, senior industry analyst at the Giga Information Group, in Santa Clara, Calif. "There's really nothing else in its class at that price point."

"There has been an overall improvement in usability and its internal processes," Enderle said. "You can do more, and it takes you less

time to do it."

Some of the features in FrontPage 98 include support for Dynamic HTML (DHTML) authoring, and "themes," which control the design elements of a Web site. Microsoft Office users can import any Office files directly into FrontPage without having to tweak the output.

Document viewing is continually updated and displayed, so users are aware of how much time it will take to download pages they create. Adding tables is as easy as drawing and erasing boxes.

The product also authors "push" channels using Microsoft's Channel Definition Format.

One user is giving his entire company Web site an overhaul using FrontPage 98, and finds it to be a feature-rich update.

"It looks like they put a lot into it," said Paul Alvarez, marketing manager at GTC Systems, in San Diego. "The database connectivity is very good, with Wizards to connect your Web pages to an Access database. And frame creation is improved."

The product also boasts rich site-management features, such as an organizational view of the Web site, which users can click and drag to change and all of the underlying links will automatically update.

FrontPage also enables teams of people to simultaneously work on sites and track who is responsible for different aspects of updating and fixing the site. Of course, because FrontPage 98 is a Microsoft product, all of the supported DHTML components and channel standards are understandably the

ones being championed by Microsoft and found in its browser, which means users will have to either avoid some features or only support one browser.

"I'm very concerned with that. It's very frustrating that the standards are out of control," Alvarez said. "I want anything I build to be used and used by anyone. I don't want to favor one browser."

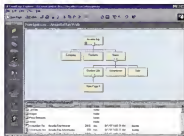
Microsoft Corp., in Redmond, Wash., can be reached at (206) 936-8080 or <http://www.microsoft.com/>.

THE WEB HOTLIST

Web sites worth checking out

- Web Site Garage** <http://www.websitgarage.com>
AWeb offers Web Site Garage, a service offering site analysis, reporting, and repair utilities. Visitors can run a URL through the free Tune-Up diagnostic program to assess a Web page's load time, HTML design, and popularity.
- Prolifics** <http://www.prolifics.com>
Software developer Prolifics provides information on its tools for building enterprise transactional systems. The White Papers section contains reports on client/server development, Web-access tools, and building application-development teams.
- Smartbooks.com** <http://www.smartbooks.com>
Internet marketing company FSB Associates presents Smartbooks.com, a resource for information on Internet-related books. Among the features are book excerpts, an author directory, and an overview of industry news.

Send your URL suggestions to jim_batney@infoworld.com.



FRONTPAGE 98'S NAVIGATION VIEW enables users to graphically change the structure of their Web site without having to worry about the underlying hyperlinks.

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Digital Island lets users rework bandwidth allocation on the fly

By Emily Fitzloff

GLOBAL INTERNET service provider Digital Island announced last week its Managed Bandwidth service for bandwidth allocation.

Managed Bandwidth enables network administrators to adjust bandwidth on a daily

basis in increments starting at 1Kbps via a secure Web interface, according to Ron Higgins, president and CEO of Digital Island.

Higgins said the company was formed so Internet users could "bypass the American network and, without mirroring all of their

data, send business applications to worldwide locations as if they were sending them via local ISPs."

Digital Island's flagship private network features a single-hop, star architecture with an Internet applications engine for the

deployment of business-critical applications, according to company executives.

Managed Bandwidth extends the capabilities of the network by enabling customers to purchase bandwidth from Digital Island and then modify its allocation according to changing business needs.

For example, executives said that if a global organization planned to perform bandwidth-hungry operations, such as videoconferencing or software distribution between its Japanese and French locations, IT managers could shift more bandwidth to that particular connection for a specified amount of time.

Higgins said that "this prevents IS managers from being forced to carry a huge amount of bandwidth overhead."

Digital Island's Managed Bandwidth is available immediately. The initial configuration of the service costs \$2,500.

Pricing for the basic subscription of 32Kb of Managed Bandwidth starts at \$2,750 per month.

Digital Island Inc., in Honolulu, can be reached at <http://www.digisite.net>.

GTE INTERNETWORKING TO ACQUIRE GENUITY

GTE INTERNETWORKING, a subsidiary of GTE Corp., has announced that it will buy Genuity from its parent company, Bechtel Enterprises.

GTE Internetworking will complete the buyout through its BBN affiliate, which it also recently acquired. The Genuity deal is expected to be completed by the end of the year. The companies did not disclose the terms of the buyout.

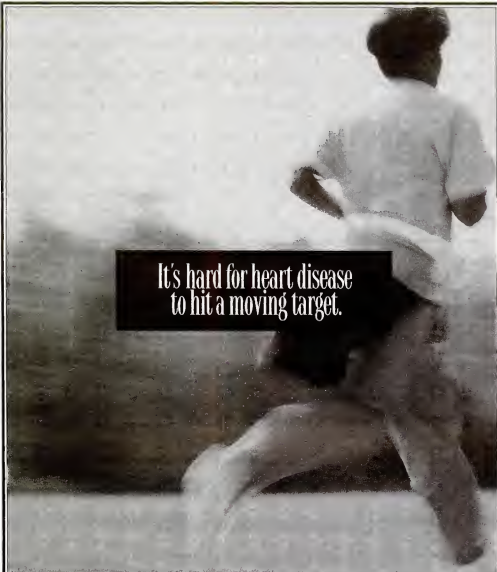
GTE Internetworking, a Web-hosting provider, has been working on transferring business applications to the Internet for customers. Company officials said this will allow customers to have greater market reach and to decrease the cost of sales, distribution, and support. The company hopes to expand to 12 fully networked data centers to provide distributed Web-hosting services with the Genuity acquisition.

Genuity provides distributed applications hosting solutions. The company has data centers at its headquarters in San Francisco, and in Chicago, Los Angeles, New York, Phoenix, Washington, and San Jose, Calif., as well as in London.

Genuity's Hopscotch service is designed to allow companies to ensure efficient data delivery across the Internet by solving busy server, network congestion, and Internet latency problems.

GTE Internetworking, in Cambridge, Mass., can be reached at (617) 873-2000 or <http://www.bbn.com/>. Genuity Inc., in San Francisco, can be reached at (415) 283-1300 or <http://www.genuity.com/>.

— Kathleen Ohlson, IDG News Service (an InfoWorld affiliate), Boston



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	ALR® Revolution™ 2X	IBM® PC Server™ 325	ALR® Revolution 2XL	Dell® PowerEdge™ 4200
Processor Type	Intel® Pentium® II	Intel® Pentium® II	Intel® Pentium® II	Intel® Pentium® II
Processor Speed	300-MHz	266-MHz	300-MHz	300-MHz
Integrated Level 1 Cache	Dual 16-KB	Dual 16-KB	Dual 16-KB	Dual 16-KB
Level 2 Cache	512-KB ECC	512-KB ECC	512-KB ECC	512-KB ECC
Dual Processor Support	Pentium II, or Pentium Pro	Pentium II, or Pentium Pro	Pentium II, or Pentium Pro	Pentium II, or Pentium Pro
ECC Memory Standard	64-MB	64-MB	128-MB	128-MB
Maximum Memory Extension	512-MB	512-MB	512-MB	512-MB
Hard Drive Included	4-GB UltraWide Fast SCSI	Optional	31-4-GB UltraWide Fast SCSI	31-4-GB UltraWide SCSI-3
RAID	Optional	Optional	RAID Controller with 4-MB RAM	RAID Controller with 4-MB RAM
CD-ROM Standard	Yes	OK	N/A	12.24X
Enhanced Standard	10/100	10 Base T	10/100	Intel EtherExpress PRO 100/5
Integrated SCSI II	UltraWide Fast SCSI	UltraFast Fast SCSI	UltraWide Fast SCSI	UltraWide Fast SCSI
Expansion Slots Total	Six	Six	Seven slots to six PCI	Eight slots to five PCI
Storage Bay Total	Seven	Seven	Thirteen (Internal, 16 5.25" / 6 3.5")	Ten External, 16 5.25" / 6 Hot-pluggable
Power Supply	325 Watts	250 Watts	Quik Hot Swap, (1) 3.5", Internal (1) 3.5"	Dual 700 Watt
Server Management	ALR InformManager™	ServerGuide™ / ATME 10 NetFinity	Dual 200 Watt (200W) Intel® NetFinity™	Integrated Server Mgmt. w/ Server Recovery
Warranty	5 Year / 36 Months	3 Years	ALR InformManager™ with Active CPR™	3 Year Standard Warranty
	\$3,295	\$3,903 <small>From IDC Pricing Database as of 10/13/97</small>	\$7,995	\$9,664 <small>From Dell's Website as of 10/23/97</small>

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Internet commerce

Comdex: Big brand names have a head start on the Web

By Rob Guth

COMPANIES LEVERAGING well-known brand names on the Web today enjoy a head start in building online businesses. But their long-run success in the digital world is far from guaranteed, according to several content providers speaking at a panel discussion at Comdex in Las Vegas last week.

Although the Web has been touted as the great equalizer—a medium that can give a small, unknown company equal presence—panelists argued that a select few have succeeded.

Aside from Yahoo and bookseller Amazon.com, new brands on the Web have not done as well as many had thought, according to Daniel Okrent, new media editor at Time.

On the other hand, companies such as Time not only enjoy established brand names, such as its magazine titles *Fortune* and *Time*, but they also have deep pockets and

promotion ability that can be leveraged when building a business on the Web, Okrent said.

One clear example of the ease with which large players can quickly get up on the Web is book retailer Barnes & Noble, panelists said. Only 6 months old, the service this

year expects to pull in about \$20 million in revenues from online sales, with most revenues to be generated in the fourth quarter, according to Steve Riggio, chief operating officer at the

New York-based company. Although Riggio acknowledged that companies born on the Web are creating new brands, he argued that the established players—such as his company and clothing L.L. Bean—will also succeed.

"These are disciplined, well-run companies. They know how to manage growth," Riggio said. Barnes & Noble's Web business is a

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ANALYSIS

natural extension of its strategy to bring stores to as many potential customers as possible, Riggio said. As the company expands its brick and mortar stores from 470 today to 1,000 by 2001, the Web will bring in new business.

"The Web is reaching customers who can't reach us," Riggio said. In addition to expanding international sales, the Web enables Barnes & Noble to reach customers who do not live near its stores or customers who don't like the culture of shopping at a retail store. The company is also trying to extend its brand name by building partnerships with other brand Web sites.

One panelist argued for the power of the fleet-footed start-up.

Audionet, a Web business that broadcasts sports events, is setting its sights on today's powerhouses in television and radio, said Mark Cuban, president and co-founder.

By leveraging the low-cost, real-time aspect of the Internet, Audionet and its partners can turn the Web into a "mainstream broad-



AMAZON.COM is one company that established its brand name on the Web.

cast" medium, Cuban said. Although large television networks hold the lion's share of viewers today, Audionet will eat away at that and already has the market for viewers checking into sports games from their work desktops, he added.

"A brand does not mean as much as people think," Cuban said. "We are transitioning from a business environment, where the brand you have is the brand you use [again] to one of trying new brands."

Time's Okrent acknowledged

that despite its huge resources, the company's move into i-commerce has not been smooth. When its Pathfinder service was launched, the company had a policy called "1,000 flowers," which meant it would try many ideas hoping that some would bloom, he said.

When that failed, Time trimmed its business plan down to four core areas at which it is an expert in the real world: entertainment;

news; business; and personal financial information, health, and family, Okrent said.

Panelists agreed that commerce via the Web is still in its infancy, so battles among content providers, whether brand names or not, are far from decided.

"Our market is tomorrow's market," Okrent said.

Rob Guth is a Tokyo correspondent for the *ITG News Service*, an InfoWorld affiliate.

CompuServe bends to group on Usenet spam-tolerance

■ Implements antispam policies

By Starnie Holt

COMPUSEVERE, an online service provider, announced last week that it is instituting policies against "spam," or unwanted and abusive bulk e-mail.

The announcement followed a two-day denial of access to Usenet—which provides thousands of online discussion groups—by a group of Usenet administrators and concerned users.

Starting Nov. 17, they banned all traffic from CompuServe servers and individual accounts. The group said CompuServe was turning a blind eye to abusive posters who flooded newsgroups with forged or fraudulent "business opportunities."

The "Usenet Death Penalty," or UDP, was last applied in August to Internet service provider UUNET, which the group said was too tolerant of spam. That penalty was also lifted in a few days after UUNET entered negotiations with the group.

Once CompuServe took steps, including an automatic "spam filter,"

specific policies on acceptable use, and making someone available by phone and e-mail, the Usenet administrators "saw no point in continuing the UDP," said Rick Buchanan, a Usenet news administrator, in Montville, N.J.

"CompuServe is not the enemy; spammers are the bad guys here. But inaction [made] CompuServe a passive accomplice to the people who are trying to destroy Usenet," Buchanan continued. "The UDP was our last resort; after CompuServe ignored months of complaints and e-mail reports.

CompuServe's Acceptable Use Policy was scheduled to go live late last week.

Last week officials were still tinkering with details.

"I'm surprised they would say we are unresponsive, because we have been working on this for two months," company representative Gail Whitcomb said.

CompuServe Corp., in Columbus, Ohio, is at (614) 457-8600.

HotOffice brings intranets to small networks

By James Nicolai

SMALL BUSINESSES that want an intranet but can't afford to pay for the hardware, software, and IT support needed to run one, gained an ally last week.

HotOffice Technologies offered a peek at its Virtual Office Service, a subscription-based suite of applications that allows companies with as many as 25 workers to communicate and collaborate using just a Java-based Internet Browser, according to company officials.

"In essence it's an outsourced in-

tranet offered via the Internet," said marketing director Pamela Stein.

The service is currently in beta testing, with commercial rollout planned in the next 60 days, company officials said.

HotOffice users can access e-mail, real-time virtual conferencing, document publishing and sharing, electronic forums, and other resources by logging on to HotOffice's servers from any PC, laptop, or other Internet access point. The various applications appear as links on the customer's per-

sonal HotOffice Web site.

The service also includes links to various information databases, including the Thomas Register of U.S. businesses, Dun & Bradstreet's company credit check, and an index of up-to-date stock prices, according to officials at the company.

Internet access is included in the cost of the service via a leasing arrangement HotOffice has with a "prominent" telecommunications and Internet service provider, which officials refused to name.

Customers' data is stored in HotOffice's Compaq ProLiant 7000 servers, which are situated at several of the ISP's points-of-presence around the United States, according to Stein.

The service is available in various packages, from prices of \$39 per month for three users and 10MB of storage space, to as much as \$199 per month to support 25 users and 250MB of storage space, company officials said. There is no set-up fee.

HotOffice, in Boca Raton, Fla., can be reached at (561) 995-0005 or <http://www.hotoffice.com/>.

James Nicolai is a San Francisco correspondent for the *ITG News Service*, an InfoWorld affiliate.

KEYNOTE BUSINESS40

Internet Performance Index

Week ending Nov. 14

29.58



Fastest site	9.57
Slowest site	73.58
Top 5 Sites	
AlphaVista	9.57
UUNET	10.79
Hotmail	12.50
Lotus	12.78
Lotus	14.07

All numbers represent time in seconds.

The index measures the performance of 40 business-related Web sites. The numbers represent the average time it takes to download a home page. The lower the number, the better the responsiveness. For more information, choose the InfoWorld Print button on <http://www.infoworld.com>. SOURCE: KEYNOTE SYSTEMS (<http://www.keynote.com>)

Vendors appeal for I-commerce protection

By Matthew Nelson

COMPAQ COMPUTER, Digital, IBM, Sun Microsystems, and Hewlett-Packard, have appealed to the U.S. government in an effort to ensure the success of commerce on the Internet.

In a letter to the White House and U.S. Congress, the group recommended a moratorium on Internet taxes, an Internet-specific language to be added to the Uniform Commercial Code, and fewer restrictions to be placed on

NEWS ANALYSIS

international export of encryption technology.

The filing of the letter by the companies, collectively being referred to as the Computer Systems Policy Project, is being seen as a positive move by

some Internet users.

"This is definitely something that needs to be looked at. A lot of states are revenue hungry, but nobody really knows how much money is going over the Internet," says Rob Blits, a senior consultant at Federal Home Owners Bank of San Francisco, in San Francisco. "I think a moratorium makes sense."

Some analysts agreed that Internet taxes are a bad idea.

"Taxation on transactions over the Internet just because it's over the Internet would be very disruptive," says Vernon Keenan, a senior analyst at Zona Research, in Redwood City, Calif. "The United States, the European community, and Japan put out rather laissez-faire comments regarding electronic commerce, preferring to let existing laws, tariffs, and regulations govern commerce over the Internet. There seems no reason to add special laws or tariffs for the Internet."

Allen Weiner, chief analyst at Dataquest, in San Jose, Calif., also points out the importance of the United States remaining competitive in the international Internet market.

"Internet technology can be used to shorten development," Weiner says. "It is a very important time for the government to get behind electronic commerce."

Ironside gears IronX toward Java developers

IRONSIDE TECHNOLOGIES has broken out its Java-development tool from its business-to-business Internet-commerce product line. IronX, now a stand-alone product, lets developers create large Java applications and place them on central servers in order to minimize applet execution on the client and thereby speed up performance.

"IT organizations will now be able to use this code to increase the speed of their applications," said Derek Smyth, vice president of marketing and business development at Ironside. "Even now the big snag against Java is speed."

Analysts praised the effort to speed up Java applications, but they warned of potential problems with server-based applications.

"Anything that they can bring to market to help increase the performance of Java will be greatly welcomed," said Erica Rugulies, an analyst at the Giga Information Group, in Cambridge, Mass. "[But] with most of the Java-class libraries working on the server instead of the client, the server's performance could decline as the number of simultaneous users increase because they all use the same number of class libraries at the same time."

IronX is slated for release in the first half of 1998 for Windows NT and AS400, with a Unix version slated for later that year.

Pricing will be determined either through a straight, unlimited user license or a developer's seat license of about \$15,000 per developer's seat.

Ironside Technologies Inc., in Richmond Hill, Ontario, can be reached at (905) 771-8599 or <http://www.ironside.com>.

—Matthew Nelson



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Viewsonic G4771	0.27	Flat-square	30-70	MPRII	NO	\$599
CTX VL700	0.28	Flat-square	30-70	MPRII	NO	\$545
Viewsonic G771	0.27	Flat-square	35-70	TCO	NO	\$599
CTX VL710	0.28	Flat-square	30-92	MPRII	NO	\$579
Viewsonic G773	0.28	Micro-Filter® (Flat-sq.)	35-70	TCO	NO	\$649
CTX EX700	0.26	High Contrast (Flat-sq.)	30-85	TCO	YES	\$629
Viewsonic 1795	0.25	Flat-square	35-86	TCO	YES	\$749
CTX EX710	0.26	High Contrast (Flat-sq.)	35-92	TCO	YES	\$649
Viewsonic P775	0.25	Flat-square	35-95	TCO	YES	\$799
CTX PR700	0.25AG	Trinitron®	30-70	TCO	NO	\$999
Viewsonic G7770	0.25AG	Sonitron®	35-64	MPRII	NO	\$749
CTX 1785XA	0.25AG	Olamondrone®	30-85	TCO	YES	\$649
Viewsonic G7775	0.25AG	Sonitron®	30-86	TCO	YES	\$749
CTX PR710	0.25AG	Trinitron®	30-92	TCO	YES	\$999
Viewsonic PT775	0.25AG	Sonitron®	30-96	TCO	YES	\$829

All prices are effective September 1, 1997. This table does not represent Viewsonic's entire product line or specifications. ©1997 CTX International. All trademarks are the property of their respective owners.

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Digital Harbor unveils JavaBeans OS

By Niall McKay

DIGITAL HARBOR, a Java start-up, will release its WAV JavaBean productivity application environment at the Internet World trade show in New York in December.

WAV is composed of Digital Harbor's Blender operating-system bean, as well as its tables bean, word-processor and page-layout bean, and Folder Bay file-manager bean.

The product is targeted at the end-user productivity application market and is designed to run on network computers, Sun Microsystems' JavaStation, or any Java-enabled desktop.

Digital Harbor also is working on bundling JavaBeans from third-party vendors with WAV, company officials said. These include Novell's Word Services spell-check bean, the Theta Groups LiveAccess database front-end bean, and Corda's chart bean.

WAV is a workspace where users create object-oriented documents

that can contain any combination of JavaBeans.

The product also can be embedded into other Java Development Kit (JDK) 1.1 created JavaBean containers such as Sun's HotJava Web browser.

"The Blender is a container in which JavaBeans can share events and properties and communicate with one another," said Roger Bell, president of Digital Harbor. "We started coding in OpenDoc as a proof of concept, and we started developing in Java in January this year."

Folder Bay enables users to view or import any file type into Java including text, HTML, or GIF files.

"There are very few true compound document products out there at the moment, so this will be useful," said Anne Thomas, a senior analyst at the Patricia Seybold Group, a consultancy in Boston.



WAV CAN INCLUDE Intel's video bean, Novell's word services bean, and several others.

"But the trick here is that it will only work with JDK 1.1 implementations of Java, and there are not a lot of products that support this at the moment."

Digital Harbor opened its doors and started developing object technology for OpenDoc in January 1996. Its staff came from Novell's WordPerfect division.

Digital Harbor, in Orem, Utah, can be reached at (800) 759-2204 or <http://www.dharbor.com/>.

Java tools to be unveiled

By Niall McKay

cosmo Software will launch its Cosmo Code Visual Java integrated development environment, and the Art Technology Group (ATG) will release its Dynamo Ad Station 3.0 session-tracking software at the Internet World trade show in New York next month.

Cosmo Code 2.5 for Java includes a Java debugger and a Java-applet designer.

The company is pitching Cosmo Code for Java against existing Java development tools such as SunSoft's Workshop, Symantec's Visu-

al Cafe, and IBM's VisualAge for Java.

ATG's Dynamo Ad Station 3.0 an add-management solution enables Internet-commerce sites to archive users' preferences and create targeted or personalized advertisements for users.

Additionally, ATG last week launched its 100-percent Java-application server.

ATG's Dynamo Application Server 3.0 enables developers to create Web applications that integrate dynamic content using existing business systems such as databases.

The product enables developers to assemble server-side applications using JavaBeans components.

Dynamo 3.0 supports automatic load distribution, user sessions, and management of user requests across several processors.

Dynamo 3.0 comes equipped with standard HTTP server security including Secure Sockets Layer and Secure HTTP. The product will be available in December and is priced at \$10,000 per server.

Cosmo Software, a Silicon Graphics affiliate in Mountain View, Calif., is at (650) 933-6068 or <http://www.cosmo.sgi.com/>.

Art Technology Group, in Boston, can be reached at (617) 859-1212 or <http://www.atg.com>.

Web, Java tools target I-commerce, graphics

By Cheri Paquet

A NUMBER of software companies at Comdex last week announced Web-site creation and development tools aimed at making it easier to set up business sites on the Internet — or jazz up existing sites with multimedia.

NEL launched its AuraLine family with its announcement of the AuraLine Java Multimedia Creation Kit. The AuraLine family is aimed at adding animation and interactive multimedia to Web sites. The kit allows users to create and upload Java-enabled animation,

sound, and special effects to a Web site. Currently available, the kit costs \$17.95 for a downloaded version and \$19.95 for the CD-ROM version, which also includes Media Library with Java animation, clip art, sound effects and PowerPoint97 templates.

Navision revealed plans to package its Navision Financials — accounting and business-management software — with an Internet-commerce tool. Compatible with Microsoft Commerce Server, Internet Information Server, Microsoft Wallet, and Microsoft SQL Server,

the tool is being readied for release in the first quarter of 1998. Its primary function is to streamline I-commerce by providing a graphical user interface to control, update, and maintain Web sites. Pricing is not yet available.

NEC Systems Laboratory Inc., in San Jose, Calif., is at <http://www.auraline.com/>. Navision Software U.S. Inc., in San Jose, is at <http://www.navision.com/>.

Cheri Paquet is a San Francisco correspondent for the IDG News Service, an InfoWorld affiliate.

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HEWLETT
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IBM enhances its Internet Emergency Response Service

By Steven E. Brier

INSTANT INTRUDER DETECTION has been added to IBM's Internet Emergency Response Service, giving another level of protection to companies that use the Internet and intranets, IBM officials said last week.

"This gives us the ability to monitor networks and respond in real time," said Jeff S. Whitehill, business development manager at IBM Global Services.

"This is designed for people doing [Internet] business, protecting intellectual property,

or protecting transactions behind the scenes," Whitehill said. "[Secure Electronic Transaction] makes it more secure when sending data, and we protect the perimeter where the data is kept."

The service uses WheelGroup's NetRanger

to detect network attacks and send an alarm as the attack occurs.

Whitehill described the service as sort of a home-protection system, with sensors placed at sensitive points on a network's perimeter. These sensors are monitored and send alarms to IBM's Network Security Operations Center, in Boulder, Colo.

The program puts the customer in "a proactive position in terms of violation or misuse," Whitehill said. "It protects from outside attacks as well as misuse on the intranet."

IBM's response is determined by the type of event triggering the alarm and security policies set up with the monitored site.

"Just as someone routinely forgetting to turn off their alarm before opening the door, and a window being broken get different responses, we will look at what happened to help determine what action should be taken," Whitehill said.

The basic service typically protects one IP address. It includes a monthly vulnerability test including probing for problems, a weekly compliance check, audit reports, and advisories as needed, and costs \$37,500. The instant intruder detection adds \$27,500, with graduated increases as more IP addresses are protected.

IBM, in Armonk, N.Y., can be reached at <http://www.ibm.com/>.



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Photos by Niall Brown

RADNET WEBSHARE UPGRADE EXPANDS WEB PLATFORMS

RADNET has begun shipping WebShare 2.5 for Windows NT, adding improved database access and memory management to the company's Web-based groupware platform.

Radnet has also released a beta version of WebShare Server for the Sun Solaris platform. The WebShare Mobile option, included in the Unix version, allows users to replicate Web-based collaborative applications and data to their laptops.

The WebShare Windows upgrade, which is ODBC-compliant, now offers better caching, leverages database filtering in views, speeds database querying, and allows single-user log-on for Microsoft servers and browsers.

A WebShare Object API now includes native hooks into InfoAccess' Transit Central for translation of word-processing and other desktop applications into HTML.

Standard and multiprocessor versions of WebShare 2.5 are available starting at \$2,895 and \$4,195 respectively. Pricing for WebShare 2.5 for Solaris starts at \$4,495, and \$6,295 for the multiprocessor version. The WebShare Mobile Option pricing starts at \$1,295 for the NT or Solaris versions.

Radnet Inc., in Cambridge, Mass., is at (617) 577-9422 or <http://www.radnet.com/>.

— Dana Gardner

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- eRoom 1.0788
- Xerox DocuShare 1.0788
- Inside the Firewall,
by Dave Taylor78D

READERS CHIME IN

Dave Taylor's two-part Java series — why Java is doomed as a pure, portable development environment — resulted in a surprising number of supporters. Find out what they had to say in this week's column, page 78D.

INTRANET DOCUMENT MANAGEMENT

Intranees have added a new dimension to workgroup collaboration. Both Xerox's DocuShare and Instructive Technology's eRoom provide workgroups with shared workspaces that can be accessed via a Web browser. Both of these solutions are easy to set up and maintain, and they are less costly when compared with groupware giants such as Lotus Notes. For a review of both products, see page 78B.

I-COMMERCE

For the latest on Internet-commerce products and issues, don't miss *InfoWorld* Electric's I-Commerce section, at <http://www.info-world.com>, where you can read features, news analyses, case studies, and product reviews relating to I-Commerce. The next Focus on I-Commerce section will appear on these pages in the Dec. 8 issue of *InfoWorld*.

HOW WE REVIEW

Intranet World reviews examine new products, focusing on their usability, features, and suitability to task. Our expert reviewers rate shipping products on a scale of cold to hot. The authors do not employ the extensive analyses used in Comparisons, so their conclusions may be different.

TALK BACK

Questions, comments, kudos? Send a message to the editor at rene@_gotcha_.info-world.com. Please include "Talk Back" on the subject line. To reach a staff author, use this format: first_name_last_name@info-world.com.

The Internet in the Enterprise

► Group Web development

TeamFusion divides Web chores

By Andre Kvitka Even now, the task of designing, building, and maintaining Web sites most often falls into the hands of Webmasters. But the myriad elements that make up a site are created by many company employees, leaving a con-

tributed bottleneck for the Webmaster. The beta version of NetObjects TeamFusion, code-named Taco, is a new member of the incredibly successful Fusion Web-site-development family that now lets teams truly collaborate on Web-site design.

TeamFusion addresses the Webmaster's bottleneck by adding client/server workgroup capabilities yet retaining the look and feel of Fusion 2.0. (See Intranet World, March 10, page 48C.) Unlike other products intended to relieve this problem — such as Net-It Software's Net-It Central, which lets users publish content to a site — TeamFusion lets members contribute and modify the structural elements of a Web site.

Webmaster at the wheel

TeamFusion approaches task dis-

tribution with four different components: Authoring Server, Administrator, Client, and Content Contributor. The first two components give the Webmaster administrative control, whereas the latter pair relieve the content bottleneck.

NetObjects' Authoring Server is TeamFusion's key component. It resides on a Windows NT Server or an NT Workstation as an NT service, manages content, and coordinates team development through a central repository for sites, assets, and miscellaneous team information. Data is housed in a secure internal SQL database that can host multiple sites under development and publish to any Web server. Although



TEAMFUSION ADMINISTRATOR contains lists of sites under development, all users, and teams of users working on various sites.

the version I tested was an early beta release, installation was simple and smooth.

NetObjects Administrator acts as a command center, where I created sites and teams and assigned various rights to team members. It runs on the same machine as the Authoring Server. My first task was to define who had access to Web sites. As

a Webmaster and administrator, I had full control of each user's rights. The Administrator has a User Import feature so I could quickly import existing users on my NT Server. I could import users from a domain on another machine — but it's limited to NT with Lightweight Directory Access Protocol support. **► TEAMFUSION page 78D**

THE BOTTOM LINE

NetObjects TeamFusion, beta

TeamFusion frees the bottleneck most companies face when getting art, content, and other data posted on an intranet or Web site by empowering users with privileges to modify and update pages.

- **Pros:** Easy to install and use; pleasant interface; gets the job done quickly.
- **Cons:** None significant.

■ **NetObject Inc.,** Redwood City, Calif., (888) 449-6400 (toll free), (650) 482-3200; fax: (650) 562-0296; <http://www.netobjects.com>.

■ **Price:** TeamFusion Business Solution (Administrator, Authoring Server for two concurrent TeamFusion Clients, and 20 Content Contributors): \$995; TeamFusion Corporate Solution (for many as 20 concurrent TeamFusion Clients and unlimited Content Contributors): \$3,995.

■ **Platforms:** Server: Windows NT 4.0; Client: Windows 95, NT 4.0.

■ **Ship date:** Jan. 1.

► Web-server software

FastTrack suffices for small shops

By David Strom

NETSCAPE'S lowest-cost Web server, FastTrack Server, has taken some minor steps forward with the release of Version 3.0.1. Although it's not the best Windows NT Web server, it is easy to set up and operate — suitable for small shops or workgroups.

FastTrack doesn't have all the features of Netscape's Enterprise Server, but it isn't as costly either. The lowest-priced Enterprise Server is one thousand dollars more. As a result, FastTrack leaves out the capability to manage multiple servers concurrently, use of the new agents and integrated search tools, and native database connections (supporting ODBC only). Also, FastTrack only supports 40-bit encryption and leaves out Enterprise's NetShare content-publishing feature.

If you don't need these features,

and require Microsoft's Internet Information Server (IIS), then it makes sense to look at FastTrack.

Version 3.0.1 adds some new features and also requires Windows NT 4.0 to run. One noticeable addition is support for Netscape's Directory Server, which supports Lightweight Directory Access Protocol (LDAP).

When you install FastTrack, it asks whether you want to use LDAP or your own user accounts to authenticate access. This means that you want to install the Netscape Directory Server first and have it working before you make use of LDAP and install FastTrack.

The Directory Server lets you synchronize your NT domain user accounts with Netscape's LDAP directories. FastTrack cannot do it on its own. Given Netscape's pricing for Directory Server, you might as well buy the SuiteSpot series and

THE BOTTOM LINE



FastTrack Server 3.0.1

Netscape's low-end Web server continues to offer a solid set of services at a reasonable price across a wide variety of platforms.

- **Pros:** Simple to set up; better access controls on content; low cost.
- **Cons:** Anonymous interface fairly cumbersome.

■ **Netscape Communications Corp.,** Mountain View, Calif., (650) 254-1900; fax: (650) 528-4124; <http://home.netscape.com>.

■ **Price:** \$295.

■ **Platforms:** Windows NT 4.0, DEC Unix, HP/Ita, AIX, Sun Solaris.

use Enterprise Server for LDAP. Version 3.0.1 gives you much finer control of access to particular document directories. For example, you can specify particular rights (such as read-only) down to the directory. **► FASTTRACK page 78D**

Web-collaboration solution

DocuShare creates Web-based community

By Mike Heck

INTRANETS HAVE spawned a new breed of applications for workgroup collaboration. Xerox's DocuShare 1.0 and Instinctive Technology's eRoom (see review, right) strive to provide workgroups with more than basic document sharing.

Both products let you establish shared workspaces that can be accessed from client workstations with a Web browser. Yet, these "teamware" solutions are simpler to set up and maintain — and often less costly — compared with groupware products such as Lotus Notes.

DocuShare is especially straightforward to administer, so I turned much of the system's power over to colleagues. In fact, about the only job for a Webmaster is initially loading the software (which takes just a few minutes), and establishing log-in accounts.

From here on, when anyone signs on to the server [with just about any Web browser], they're greeted with a list of "collections" assembled by their team. For example, as I opened a collection of *InfoWorld* review

► **DOCUSHARE** page 78D

THE BOTTOM LINE



Xerox DocuShare 1.0

Using your intranet, DocuShare creates a meeting place where users with little technical background can place and manage shared information.

- **Pros:** A simple folder structure organizes document collections; end-users administer system; version control tracks document revisions; search function; supports calendars and bulletin boards.
- **Cons:** Requires multiple forms for adding and retrieving files.
- **Xerox Corp.,** Palo Alto, Calif.; (800) 428-2995; <http://www.xerox.com/products/docushare>.
- **Price:** \$695 (one server with 25 clients); \$995 (50 clients); \$495 per each additional 25 clients.
- **Platforms:** Server: Windows NT Server 4.0, Microsoft Internet Information Server, Sun Solaris 2.5 (with Apache Web server); Clients: Windows, Macintosh, or Unix with Internet Explorer 2.0, or Netscape Navigator 1.1 or later.

Web-enabled document management

eRoom builds a secure, shared workspace

By Mike Heck

GROWING TREND in today's flat organizations is to have teams quickly assembled for special projects. Yet, members often work in remote locations, and spend too much time trying to communicate.

Instinctive Technology's eRoom 1.0 goes a long way toward solving this problem by creating appealing "virtual spaces" where members can go to discuss ideas and share information, similar to Xerox's DocuShare. (See review, left.) eRoom is similarly easy to set up and administer, requiring minimal training and IT support. But where DocuShare's primarily a file manager, eRoom does that better and adds collaborative functions like voting.

So what's the catch? Besides the higher price, eRoom's currently limited to Windows PCs because it uses ActiveX controls — and it doesn't yet work with the latest browsers. But if those constraints don't bother you, eRoom's a remarkable product.

Foremost, eRoom works just like the standard Windows applications you use everyday. For example, I dragged files from my Windows 95 desktop to a folder within the eRoom space. Plus, I edited a Microsoft Word document in place — so there's no need to maintain copies of the same file on different users' PCs.

This works well because eRoom caches the file on your machine, and automatically uploads changes to the server when you finish editing. The file's isolated during editing to others can't interfere with changes. If anyone wants to experiment, the Version Organizer lets team members create personal copies of a file. When everyone agrees on the content, you just drop the approved file into the Current Version box.

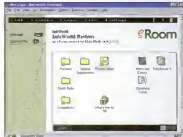
Setting up eRooms and making the different items collaborate is equally straightforward. I merely clicked the Create button that appears above the eRoom desktop to add folders, files, notes, discussions, links, and polls. Each eRoom page has a list of members who can open it — which I specified with a simple Access Control dialog.

Other parts of an eRoom space are equally serviceable. The note page, for example, let me jot down ideas (using the eRoom editor) that others could read without launching their word processors.

A good way to react to notes (or anything else) is in an eRoom discussion page. Here, people write comments, which are indexed on the left of the screen. Unlike DocuShare's fairly static Bulletin Board, I added links pointing to another page or file within an eRoom comment.

After those discussions, participants may want to vote before reaching a decision. I used the Poll function to quickly write various questions and enter as many as eight choices for each ballot. As voting progressed, eRoom showed a tabulation of the results.

An eRoom may contain links, shortcuts to a Web site, another eRoom or a page within the current room, or a file. If you don't want this formal navigation, eRoom's Find button



AN eROOM clearly presents project files, discussions, and links to other rooms.

helps users look for specific text. Searches are built using logical operators — and may ask for items within a certain date range, or items created by particular team members.

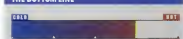
Further, eRoom includes several methods to quickly identify what information has changed. When entering an eRoom you see unread marks on items with new information. E-mail reports are another way to keep abreast of changes; the report conveniently contains links to the new data. Finally, the eRoom Monitor — a pop-up menu that appears on the taskbar — indicates eRooms containing changes.

Instinctive is planning a near-term point release to support Internet Explorer 4.0 and Navigator 4.0, and has given priority to releasing clients for other platforms.

Using eRoom 1.0 in the Windows form was a pleasure. Resourceful use of Web technologies gives you a true sense of space and immediate interaction. What's more, it integrates with existing applications using drag and drop, and requires little of team members to modify eRooms or rearrange the workspace.

Contributing Editor Mike Heck (mike_heck@infoworld) is manager of electronic promotions at Unisys, in Blue Bell, Pa., and responsible for online services.

THE BOTTOM LINE



eRoom 1.0

Without administrative overhead, team members can quickly set up an area to share documents, identify and discuss issues, and search.

- **Pros:** Drag and drop files into an eRoom; encryption and server security; version organizer; discussion page; links to Web sites, eRoom components; permits voting.
- **Cons:** Requires browser plug-in that doesn't yet work with Navigator 4.0 or Internet Explorer 4.0; clients limited to Windows.
- **Instinctive Technology Inc.,** Cambridge, Mass.; (617) 497-6300; <http://www.instinctive.com>.
- **Price:** \$2,995 (room of 25); \$4,995 (50 clients).
- **Platforms:** Server: Windows NT Server 4.0, Microsoft Internet Information Server 2.3, Client: Netscape Navigator 3.x, Internet Explorer 3.x on Windows 95 or NT 4.0.

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TeamFusion

Continued from page 78A

coming in future releases. I also could manually add users.

Next, I assigned privileges to users based on the tasks they would perform and their roles on the Web-development team. Unlike rights in a network, privileges in Team Fusion carry a list of tasks that a user can perform. For example, a site



creator can create a new site but may not inherit rights such as Site-Structure, which modifies the site's architecture. Other privileges include SiteStyle for style modification and Page Layouts for content and design work.

The last step was to define teams by assigning specific users to sites on the Authoring Server. What I found important was that privileges could be adjusted per user and per site.

Sharing the content load

The TeamFusion Client looks and

functions almost identically to the standard Fusion 2.0 product but does not replace it. For those who already use Fusion 2.0, an additional executable file will be created to run with TeamFusion.

Once the TeamFusion Client is launched and a site from the Authoring Server is selected, the user checks out sections of the site for modification, just like checking a book out of the library. Once I checked out a section, no one else could use it until I checked it back in.

Users working on the same site can pull up a list of items and see who has checked items out. The client interface is pleasant and easy to work with: Icons are placed in just the right areas to reflect status.

The last component, which reinforces TeamFusion as a true collaboration tool, is Content Contribution. This smart module allows users to contribute data to sites using nothing more than a browser. Even in this early beta release I was able to quickly define data objects to appear in a press release page and then update the actual content using a data-input form in Netscape Navigator. TeamFusion is on its way to easing the burden on Webmasters—and may be taking away too much. But companies should reap the great returns on their investment using TeamFusion for Internet and intranet developments.

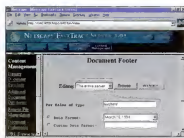
Andre Kvitka (andre_kvitka@info-world.com) is a technology analyst who reviews Web-development applications, among other things.

FastTrack

Continued from page 78A

user, and group level. FastTrack makes extensive use of JavaScript within a browser for its administration. Although it's nice to control your Web server from a browser, sometimes the simplest command takes several mouse clicks. When it came time to add document directories to my Web, I was mildly annoyed that I could not browse my own file structure. Unlike Microsoft's Management Console and IIS, both of which use the browsing method, FastTrack presented me with a simple Web form to type in the path name.

If you know your way around the server's configuration files, you can do the job more quickly with a text editor. It also took me a fair amount



FASTTRACK's JavaScript-enabled administration interface, which comprises multiple frames and buttons, is still rather clunky.

of time (one-half of a minute or more) to bring up administrative screens, which run as a separate NT service. Once I got connected, however, moving from screen to screen was relatively snappy.

I tested FastTrack on a 180-MHz clone with 32MB of RAM running NT 4.0 with Service Pack 3, the minimum configuration recommended

by Netscape. I used Versions 3.0.3 and 4.0.3 of Navigator for administering the server. Unfortunately, just about every change in server configuration results in having to restart the server. Competitors' servers, such as Microsoft's IIS, can post their configuration changes immediately and without any restarts. FastTrack also has less logging capabilities than IIS.

I used to like FastTrack. It was simple and did the job. But I'd stick with IIS on NT or use Enterprise Server on Unix—both have a better set of features for the money.

David Strom (david@strom.com) is president of his own consulting company in Port Washington, N.Y. His Web site is <http://www.strom.com>.

DocuShare

Continued from page 78B

material (by clicking on familiar Web hypertext links), the software presented a neat nested list of text and graphic files previously contributed. DocuShare then offered options to add files, URLs, calendars, bulletin boards, and so on.

Moreover, as the owner (creator) of each of these object types, I easily set various permissions: Reader, Writer, or Manager. For instance, a Writer can lock and unlock files and add new versions—but not delete the object.

In making DocuShare work on

many platforms—and with older browsers—some compromises were made in content handling. You can't perform any drag-and-drop operations in Windows or the Mac OS; instead several Web forms must be completed for uploading or retrieving files. Nevertheless, the software didn't restrict the type of file that I could store and share.

Moreover, DocuShare adds bulletin board, calendar, and search functions—which may save you from purchasing separate applications. The online calendar acts as a private calendar or as a shared group calendar.

Bulletin boards aren't robust, but they still can be useful. Basically, think of them as places to post mes-

sages. You can also indicate when to automatically archive entries.

I could not create threaded discussions, which would make it easier to follow online conferences. However, I had no trouble using DocuShare's search function.

Xerox DocuShare did what I expected—it quickly created private areas in which teams could share documents, thoughts, and schedules. Considering its cross-platform client compatibility and relatively low cost, I did not feel shortchanged by the extra work of loading documents.

Contributing Editor Mike Heck can be reached at mike_heck@info-world.com.

INSIDE THE FIREWALL • DAVE TAYLOR

Readers reach some agreement on Java portability

THE LAST TWO COLUMNS have explained my view of the fundamental problem lurking behind Java and why it's important to consider as you plan the upcoming growth of your intranet.

I'll be candid with you: I ran my thinking past a variety of colleagues at dinner parties and professional events and was surprised to find that they agreed with me. You—my InfoWorld readers—however, I thought would surely disagree, even accuse me of blasphemy to strike at the temple of Java.

Imagine my surprise when the dozens of e-mail messages tended primarily to agree that Java will never be a pure "write-once, run-

everywhere" development environment.

Those subtle acronyms

Before I go any further, a number of people pointed out that I was mistaken when I wrote about the Common Object File Format (COFF), and they're right. In fact, what I meant to highlight was the failed Application Neutral Distribution Format (ANDF) project that was sponsored by the Open Software Foundation.

As I highlighted before, the vision of ANDF was that programs would be compiled to a portable intermediate format, which would then be translated into a native code format upon installation. Java does exactly the same thing, albeit its installation has been abstracted to invocation.

Reader John McNamee wryly asked, "I wonder when one of the Java VM suppliers will rediscover [ANDF], come up with some sexy buzzword to describe it, and claim to have invented it themselves."

The other issue that people argued about

was whether there was an official supported version of Netscape Communicator for Linux and FreeBSD. The answer is that if you have the savvy to find your way to the Caldera Web site, or if you poke around with your FTP client on the Netscape FTP archive, you can find a version of Communicator for your free Unix OS.

That's not good enough to make it a supported platform in my book. A supported OS is one in which I can go to the Netscape site with my browser and find my OS listed in the pull-down menu of platforms. Last time I checked, it still wasn't listed on Netscape's Web site.

Back to Java

Two readers expressed their views eloquently about my perspective on Java. Java programmer Greg Williams agreed with my view: "Although the 'write-once, run anywhere' really is good PR, I wouldn't be surprised if it didn't really come through. I wouldn't be that upset if Java ended up as a

language that you compile to native code on various systems. I'd be happy with a 'write-once, compile-anywhere' model. It may be easier to implement that level than try to support a virtual machine on multiple systems. It's a far easier language to write in than C or C++, so I don't think it will die as a language. This comes from a developer who has helped write a 100,000-line Java client."

Doug Glen was exemplary of the other reaction to my Java piece: "I'm sorry, but I find your article misleading with its title and your conjecture. It serves the purpose of draining possible support for this language by creating an atmosphere of distrust by its very existence...at least with that particular title on it...Oh well, the damage has been done."

However you see things, it's unquestionably a topic to consider carefully as you build the foundation of your future intranet.

Dave Taylor is president and chief technology officer of The Internet Mail (<http://www.internetmail.com>) and can be reached at taylor@internetmail.com.

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Crazed by the runaround, software buyers say that late is not better than never

What does it mean when a vendor says a product will ship "real soon now"? Probably anything but soon. Still, customers have to make decisions about their business futures based on interpreting such promises, and that's when it's all too easy to get into trouble. Last week we looked at the example

of Java developers expecting a free but delayed update to Symantec's Visual Café. This week let's consider the case of a reader I'll call Mr. Waite, and his company's purchase of Lotus Organizer GS. Mr. Waite was intrigued early this year when Lotus began discussing plans to make it possible for users of



the original release that noted Organizer's existing ability to access one's stand-alone personal information manager data via the PalmPilot, and that for Organizer 97 GS customers using Notes and Domino, Lotus plans to post PalmPilot synchronization on the Lotus home page (this summer). (Most press re-

ports also failed to point out this detail.) Discovering that after the fact hardly placated Mr. Waite. "The problem is the way Lotus promoted the product. After all, why would anyone buy GS if they weren't looking for the GS feature?"

By the time Mr. Waite was writing to me, though, it was no longer summer, and he was still having trouble getting anything but "real soon now" answers from Lotus. In August, he was told it would be available in September, then October? But I don't believe that either.

While tracking the Lotus on-discussion groups, Mr. Waite did notice some confusion as to whether Lotus or USR was going to be producing the necessary software for the sync, called a "conduit" in PalmPilot parlance. "Then along about May, when Lotus was about to announce the release of Organizer GS, suddenly Lotus was taking responsibility for delivery of the conduit." In telephone conversations, Lotus representatives told Mr. Waite that the company would be part of the GS release because Notes 4.5 C&S and Organizer GS were basically the same thing with different faces.

By the time Lotus shipped Organizer GS early this summer, Mr. Waite thought he'd done his homework on the product and was ready to buy. He was therefore shocked to discover that the conduit wasn't yet shipping with the product, and even more shocked that he couldn't seem to get any straight answers from Lotus about it. "Customer service and tech support profess total ignorance, and the Web pages are full of unanswered questions asking where the advertised product is."

Although Mr. Waite had studied the many Web pages carefully, he missed a passage in

TO THE EDITOR

Many issues were raised by our readers this week: Violations of public trust, year-2000 fixes, the definition of "spam," and the future of Windows NT as a viable enterprise solution. Do you agree with what these readers have to say?

Public trust?

MICHAEL VIZARD ASSERTS that companies would derive economic benefit from slowing down the rate of change, that Microsoft/Intel are coercing them into spending money needlessly, and that Windows is violating a public trust in doing so. [See From the News Desk, Nov. 10, page 3.]

"Public trust" is a concept that has no validity in economics or business, but rather is an attempt to push politics into these arenas. Companies, large or small, may indeed have an interest in keeping computers alive longer, but this is hardly a "public interest." Faster computers in smaller, cheaper packages are an economic benefit for many corporations and individuals. We may lament the cost, but we usually can justify a more powerful system.

Intel and Microsoft don't violate the spirit of Sherman AntiTrust either. They continue to sell the old systems, which are generally no longer economically viable due to the rate of change of semiconductor manufacturing technology. Neither company controls this rate of change but rides the wave along with the rest of us.

I don't feel that my relationship with either Intel or Microsoft is one-sided, whether I'm working as a consultant or as an engineering manager. Prices for top-end machines decline yearly, and the work I get from myself and my engineers is proportional to the power I can provide to handle the toolsets.

I may dislike the \$2,000 I pay for Microsoft's development tools but believe that Microsoft is doing a fine job in providing ever-better tool sets at all levels and providing ever-more productivity for developers.

In summary, Vizard presents a fallacious argument: invoking a nonexistent common interest for the economic benefit of a minority.

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Double standard

INFOWORLD'S RECENT NEWS article on Sun [Microsystems] brings up an interesting scenario. [See "Sun loses round in ISO standard process," Nov. 3, page 6.] I am quite surprised that HP, Digital Equipment, and Unisys opposed Sun controlling the Java standard. These companies manufacture multipatform systems and have more to gain by voting in favor of the Sun proposition than against it.

One has to wonder if these companies lack the backbone to make their own decisions without looking to the Microsoft/Intel regime for guidance.

Is Microsoft willing to give all of the Microsoft Windows APIs over to the ISO? If not, Microsoft's position presents a clear double standard.

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Hurry up and wait

AFTER READING Nicholas Petreley's article claiming it is time to "Hurry up and wait for the future of computing to unfold," I simply

had to write. [See Down to the Wire, Nov. 10, page 160.] His feelings on Windows NT's stability issues are shared by, I believe, the majority of us system engineers. I hold a great deal of respect for him and his matter-of-fact articles, and hope that nothing will ever bring a stop to them. I ensure that managers and other engineers alike see every one of them.

As Petreley points out, Microsoft and NT have a long way to go before they can pretend to be an enterprise solution. I find myself wondering over and over, Does anyone examine the facts any more? Unix and clones have been there for so many more years just running and running. They have proven themselves time and again as a reliable backbone to any corporate production network. Yet I hear horror story after horror story of IT managers abandoning them to put in place NT and its family of BackOffice products. And as Petreley said, they gain nothing and experience a multitude of problems, hence ever-increasing their cost of operation. When are they going to wake up? When will the shift to reliable software occur?

I can only hope that with writers such as Petreley putting these thoughts in print, IT managers will one day begin to think in terms of reliability and availability again, and not follow Microsoft propaganda blindly. I just want to thank Petreley for speaking on behalf of engineers all over.

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TO PUSH POLITICS INTO
THESE ARENAS.

Low Glendenning

Tip on the year-2000 problem

AS THE EDITOR of the recent Test Center Analysis, Julia Carreon went over some of the problems with the upcoming year-2000 chagover. [See "Debate on the desktop," Nov. 10, page 106.] One of the specifics she brought up was the hardware issue — that some BIOSes will not be able to handle the new discovery.

I discovered something on my own that may have an impact on other InfoWorld subscribers and their systems. This applies to [American Megatrends'] BIOSes and perhaps other BIOSes as well. The problem is that many systems that will roll over to 2000 will not let the user reset the date to any 2000+ date. That is, if you leave things alone, the date will move to the new century just fine, but if the BIOS gets zapped, the battery dies, or for some reason you need to change the date manually from the keyboard, it will not accept any date starting with the year 2000. I contacted Intel, which was not aware of the problem or solution until I showed it to them. To say they were surprised was an understatement!

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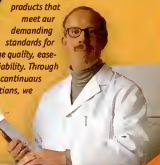
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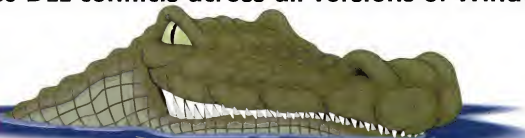
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The InfoWorld Futures Project is an industry-wide discussion about the future sponsored by InfoWorld, The Voice of Enterprise Computing. Sparking the discussion is the InfoWorld Futures Board, an outstanding group of leaders whose ideas will be featured in *InfoWorld* advertising every month.

Our goal is for this discussion to take on a life of its own. And just like the future, we can't predict where it will go. You're invited to join in.

Why InfoWorld?

InfoWorld has always been about the future. For almost 20 years, we've helped our readers select the best products and technologies to prepare their companies for tomorrow. Providing the platform for this discussion is the logical outgrowth of who we are.

Who Is Participating and Where?

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Notebook or Desktop



Support costs and
productivity weigh heavily
in desktop upgrade decision

By Mark Brownstein

With prices of notebook PCs dropping and their power and expandability rising, the decision to go with a notebook or its desktop brethren as the corporate standard gets tougher all the time. End-users from top executives to sales people love the flexibility and can make a strong case for the productivity that notebooks afford corporations. But IT managers still face the issue of cost — both up front and support — staring them in the face when it's time to upgrade their PCs.

There may be little doubt that the notebook computer initially costs more than a similarly equipped desktop computer. LCDs, probably the most expensive notebook component, and proprietary board and component designs will cost more than desktop computers.

In addition, the portability of notebook computers places them at risk of travel-related damages to which desktops are never subject. Dropping, thermal problems (leaving a notebook in a hot car trunk is not healthy for the computer), and other similar hazards can all contribute to increased support costs when compared to the desktop.

However, a notebook computer used on a desktop provides a number of advantages over desktop computers. A notebook connected to a docking adapter or port replicator, or simply hooked to an external keyboard and monitor, with a PCMCIA Ethernet card linked to the company's network, can function as a desktop replacement.

When compared to a desktop, in-office notebook support also works around desktop-related problems. For example, a notebook that develops a problem can easily be removed and swapped with a notebook from the company's support inventory. By contrast, technicians probably don't look forward to lifting a 15-, 17-, or 20-inch monitor off a desktop computer to gain access to it.

Citing these benefits to corporations, Gerry Purdy, an analyst at Mobile Insights, in Mountain View, Calif., predicts that by the year 2000, the number of corporate notebook computers will equal the number of desktop computers being used. According to Purdy, IT is in the late stage of a phase that has begun to recognize that notebook computers now offer performance equivalent to most enterprise desktops. In 1998 and 1999, IT will better understand the advantages

notebooks have over desktop computers and will begin to purchase more notebooks than desktops, Purdy says.

Some counter that heat concerns with the next versions of Intel's processors will make desktops a more powerful option. But the image of workers tending to unfinished business outside of work hours, such as catching up on e-mail after the kids are put to bed, is what is going to sell top management on notebook productivity.

"What we're finding is that on the average, employees are using a mobile computer four hours a week outside of normal work hours," Purdy says. "The economic return for a computer that costs about a thousand dollars more than an equivalent desktop can be anywhere from three to six months of work, depending on the individual. There is a very fast payback for most companies."

PORTABILITY = PRODUCTIVITY. The notebook's portability provides numerous benefits, such as the capability to make sales presentations, offer training remotely, give formerly desk-bound workers the option to work at home, and communicate through videoconferencing.

The payoff from each activity in many cases can quickly offset the extra cost of notebook ownership. Assuming that the cost of ownership of a notebook computer is \$5,000 during the notebook's lifetime (a figure that may be much higher than that paid by most companies), the payoff resulting from extra hours worked away from the office can quickly make up for the difference. The chart on page 94, based on an analysis by Dataquest, a market researcher, in Santa Clara, Calif., shows the number of hours per week that are required to pay off a \$5,000 ownership cost difference during the first year.

COMPLEX SUPPORT EQUATION. But despite these productivity metrics, support costs for notebooks can be significantly higher than for desktops, which stay put and can be fixed on-site. Because support depends so much on usage, IT managers have to run complex equations. For example, a notebook user in another time zone or, perhaps, another country, will require a significantly different level of support than a worker who can bring a failed notebook back to the office the next morning.

TOMORROW'S NOTEBOOKS MAY CLOSE THE DESKTOP GAP

The increase in notebook sales has been fueled by an ongoing stream of technical improvements that are making the notebook an irresistibly attractive desktop replacement. Improvements in notebooks' design, upgradability, and a move toward additional notebook-related standards will make the notebooks of the next year or two even more attractive as desktop replacements.

This year's notebook computer sports a number of improvements — some visible, some not so obvious. In terms of

performance, for example, CPUs have caught up with desktops. An IT manager can get the same performance out of both a desktop with a Pentium 200-MHz or 233-MHz MMX CPU and a notebook. The argument that notebooks take a back seat to desktops, with respect to performance, has lost its factual basis — at least this year.

The new Tillamook processor, which began shipping early this year, uses considerably less power than its 3.3-volt predecessor. What this means is that the traveler can carry a smaller battery while getting more useful hours

from a full charge than was possible with last year's CPU.

Universal Serial Bus (USB) devices, about which much has already been written, is now making its way onto many notebooks. While providing transfer rates as high as 12Mbps, a single USB port can connect multiple devices — including one or more modems, a keyboard, mouse, network connection, printer, scanner, or other peripherals. Today, USB devices are just beginning to come onto the market. Over the long term, USB drives and peripheral devices will be a reality.

► TOMORROW page 94

Beneath the surface of every desktop you'll find a common story.
The classics, Lotus Notes®, Corel® WordPerfect® Suite and Microsoft® Office,
are all written in Microsoft® Visual C++®.

Microsoft® Where do you want to go today?®

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Visual C++
Member of
Microsoft Visual Studio

\$5,000 notebook payoff

Annual Salary	Number of hours per week for payoff in one year
\$30,000	6.7
\$40,000	5.0
\$50,000	4.0
\$60,000	3.3
\$70,000	2.9

SOURCE: DATAQUEST

Various levels of support may be assigned to the users, depending on their distance from the main office and the importance of their job function. For example, an employee who takes the notebook home primarily to catch up on work or send and receive e-mail may not require after-hours support, though a key sales person who is on the road nearly all of the time may require around-the-clock support.

Service contracts, which typically cost about 15 percent of the notebook's purchase price per year, are one option available to corporate purchasers, according to Bruce Nash, senior vice president of technology services at Robert Plan, an insurance company, based in Uniondale, N.Y. But although this may take care of hardware problems, companies that use specially developed software or information systems may still have system-support issues ahead of them.

Robert Plan is handling hardware support in a somewhat novel way. The company standardizes on a limited number of notebook models and purchases 10 to 15 percent more machines than it puts to use, keeping the extras as replacements for notebooks that stop working.

"We keep a spare or spares available so that we can do a

quick exchange with the user," Nash said. In the company's remote offices, "we will probably overnight the unit. If the user is in New York or New Jersey, we can exchange it within a few hours."

After swapping out the notebooks, the disabled notebook is repaired, usually under the manufacturer's warranty. Over the long term, Nash expects this support approach to be more cost-effective than purchasing a service contract because the company pays the 10 to 15 percent fee only once, rather than annually.

Perhaps the largest problem with swapping notebooks or, indeed, with managing any notebook computer, is the loss of data—much of which can be highly sensitive for the corporation—on the notebook's hard drive. If a unit is swapped or sent away for service, the data travels with the computer. If the notebook is not returned to the user, or if the hard drive was the component that failed, all of the user's data will be lost. Users say frequent replication of data on a safe server is an important aspect of notebook management.

See chart below for a general summary of support requirements and potential payoffs.

WHO'S THE LUCKY ONE?

With support costs shifting according to function, IT managers need to decide who gets a notebook. At some companies, the question of a notebook or desktop computer is left to the employee as an "either/or" decision. Lindsay-Ferrari, an office-furniture company, in San Mateo, Calif., has adopted a one-company policy.

"For sales and other functions, the benefits of notebook portability are significantly higher than the added cost of ownership," one company official says. In the use of

Tomorrow

Continued from page 93

peripherals will be equally at home on the desktop or connected to a notebook.

The CardBus is a hidden technology that provides for considerably higher data transfer rates than the old PCMCIA standard. A new CPU module, closely related to the Pentium III, which is commonly referred to as a Mobile Module, comes installed on a card that slides into a modular socket on the notebook's motherboard.

Combining a low-powered CPU with cache, the Mobile Module will simplify the task of customizing notebooks to meet the customer's requirements, says Gerry Purdy, an analyst at

Mobile Insights. In theory, a company may also be able to upgrade its notebooks by installing a new and faster processor into a notebook that uses the Mobile Module.

However, the theory may not apply. According to Scott Mueller, president of Mueller Technical Research, and author of books on upgrading PCs, making such an upgrade may cause more problems than passing down the older machine and buying one with a newer processor.

The thermal characteristics of each processor may change from module to module (in other words, a 300-MHz module may produce more heat than a 233-MHz module), and the thermal differences may exceed the notebook's design "envelope," Mueller said. In addition, even

when the form factor may be the same, there may be other differences between modules that make the interchange of modules impractical if not impossible.

FireWire, also known as the IEEE 1394 specification, will also make its way onto the notebook computer, providing very high-speed connections to a network or to compatible peripheral devices. With USB and FireWire, the historic notebook bottleneck should become a thing of the past.

A standard docking port specification is also being developed. Though the specification may still retain proprietary flavors, it will enable swapping of devices, such as hard drives, floppy drives, CD-ROM and digital video disc drives, and batteries, from notebook to notebook.

notebooks for field sales and product presentations, Lindsay-Ferrari allows employees "whose primary workplace is the office, but who wish to work after hours or who may occasionally travel," to also use notebook computers.

These employees can have a notebook computer or desktop computer "but never both," the official added.

Technology's pace also requires managers to actively manage the notebook fleet. For Wall Data, a software developer, in Kirkland, Wash., a cascade program is in the works.

According to Brad Julum, purchasing supervisor at Wall Data, "part of asset management is determining a cascade program." Such a program identifies which employees require frequent upgrades to state-of-the-art machines, and traces the path of older notebooks through the company.

Julum notes that "although a notebook may be obsolete for its original intended user, more than 90 percent of the time we can find another user for it within the company, either a lower-end corporate user or in a test lab."

GOOD NETWORKED CITIZENS.

One more factor to consider is how to connect the mobile user to the office network. This may be as simple as an Internet connection through a corporate firewall, using a local dial-up Internet service provider for the connection. But depending on the company's security requirements, connection may require travel to a branch facility with a secure T1 connection to other company sites or, in the most remote areas, might even involve satellite transmission of data.

In the office, connection to the corporate network is also taking a number of directions. The primary choices are a CardBus Ethernet adapter, a port replicator, or a docking station.

"We don't typically use docking stations," Julum says. "Our machines have network cards, so if they are at a location where they can plug into the network, that's option number one. We also have a remote-access server account for dial-in [connections]."

At Robert Plan, most notebook computers are attached to docking stations, Nash says. A docking station allows the company's technicians to use PCI cards. However, "for router repairs, or hubs at different offices, they have to plug in [CardBus Ethernet adapters]," he says.

For many companies, the decision to lease, instead of buy, the notebooks may be very attractive. For one thing, a lease with a life of 18 to 24 months means returning a notebook that is nearing the end of its practical life to the leasing company.

Another attractive element about leasing is that a department may be more readily able to authorize the commitment to the monthly cost of leasing than it would be to the much larger, one time, capital expenditure to purchase the notebook.

Jim Schwabe, senior vice president of the Portable Systems Division at NEC Computer Systems, noted that "we're seeing a lot more leasing. People want to lease a notebook for two years, and replace it at the end of the lease with a newer version."

Schwabe notes that "we're seeing a 12 to 18 month quantum leap [in capabilities of notebooks], so a 24 month lease is a stretch, but not too much [of a stretch]."

Analysts are seeing a significant rise in the deployment of notebook computers in the enterprise. During the next few years, Purdy's prediction that all workers will be using notebook computers may not seem so far-fetched.

In Purdy's words, there will be a "fundamental shift [from the notebook being] an adjunct [to the desktop] that was merely tolerated, to being something that is clearly mainstream."

The enterprise may be headed for more notebooks, but it is IT managers' ability to resolve these thorny issues that will keep the notebook's future bright.

Mark Brownstein, a free-lance writer in Northridge, Calif., is a technology editor for numerous magazines and has written several books about PCs.

Measuring support cost and payoff

User level	Support costs	Support level	Financial benefits
Field sales, customer support, and similar job functions requiring high levels of portability	High	Maximum, requires around-the-clock support	High. Increases productive hours. Enables functions not possible without a notebook
Executives, in-house sales, a user with occasional off-site requirements	Moderate	Moderate. May require around-the-clock support when traveling.	Moderate. The benefits of business travel could outweigh support costs
In-office employees who use notebooks at the home or office	Medium. Support costs may be higher than for notebooks that are not removed from the office.	Medium. Support is usually provided in-office, during normal business hours. Support costs may be lower than desktop, because notebooks are easier to swap, reducing downtime.	Benefits may be related to reduced in-office downtime. For use away from the office, additional worker productivity can offset support costs
Notebook used most or all of the time on an office desktop	Low. May approach costs of desktop support. Support contracts may run 10 to 15 percent of purchase price	Low. Support is provided during normal office hours, on-site. Swapping notebooks may reduce downtime and increase productivity	Low. Computer functions as desktop replacement. Improved reliability of notebooks and easy swapping of notebooks can reduce downtime

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IS SURVIVAL GUIDE • BOB LEWIS

You don't have to look far to find plenty of turkey stories in management

MANAGEMENT SPEAK: We see no changes in management at this time.
TRANSLATION: We're planning a bloodbath.
— Thanks to reader David Grusel for this week's addition to our phrase book

WORTHINGTON, MINN., claims to be the turkey capital of the United States. It has competition, though. Example: In his autobiography, Dennis Green, head coach of the Minnesota Vikings, describes his plan to sue the team's owners if they refused to sell him a 30 percent share of the company.

Since a) privately held companies have no legal obligation to sell themselves to head coaches; b) writing an autobiography when you're as unsuccessful as he is reveals an ego as big as Green's waistline; and c) when you play hardball politics you're best off doing it covertly; Minneapolis gets to include Green in its turkey production total. And at 285 pounds, he compensates for a large fraction of Worthington's turkey production

all by himself.

While you're in the mood for turkey, here's another turkey story for you from a reader I'll call Stan, who worked for a major U.S. corporation. The words are mostly his — I'm lightly paraphrasing from his description.

Once upon a time, Stan was a front-line manager responsible for keeping a large number of PCs running in five locations.

Stan instituted a preventive maintenance program and logged the results to help him spot trends — information that came in mighty handy on several occasions.

Then his management instituted a new trouble-calls process.

Instead of having end-users call Stan's department directly, they were directed to call the front desk, which in turn called the help desk at corporate headquarters, which then opened a trouble report and paged Stan's department, alerting them to a problem occurring probably no more than sever-

al dozen paces away from their office.

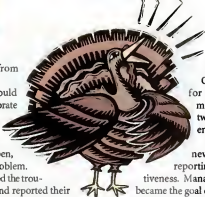
Stan's analysts would then log onto the corporate mainframe, find the trouble report, assign it to themselves, change its status to open, and then fix the problem. Afterward they retrieved the trouble report, closed it, and reported their time (including the "administrivia," which usually took more time than fixing the problem), and what they got to fix it.

One thing you get from an advanced help desk system is statistics. Lots of 'em. And so Stan got some feedback on the success of his preventive maintenance program: Of all the offices, his had the smallest volume of trouble calls.

You know where this is going.

Stan's managers were devotees of the if-you-can't-measure-you-can't-manage school of process supervision, but not graduates of the be-careful-what-you-measure-because-that's-what-you'll-get college of advanced techniques. They measured productivity by number of trouble calls responded to, and therefore Stan's office was the least "productive."

Management could not justify paying three salaries for such an "unproductive" office and gave Stan 30 days' notice. Stan predicts that when the trouble call volume increases for this office (as it inevitably will), management will point to its statistics to show how cutting one salary raised



productivity. OK, let's be serious for a minute. Stan's management made two basic conceptual errors.

First, it designed its new process around reporting, not staff effectiveness. Management reporting became the goal of the system, not a desirable byproduct.

Problem-management systems must always improve convenience for end-users and be unobtrusive and helpful for technicians, or they'll fail.

Far worse, though, Stan's management confused internal process-management measures with external, business results measures. "Trouble calls responded to" merely measures a departmental subgoal, not a business result. The business result is measured by end-user uptime, however it's accomplished.

Stan's management, obsessed by numbers, had no interest in the business result. (No, I won't name the company. If I did, companies that might do some soul-searching wouldn't bother.)

Oh well. At least we won't suffer from a turkey shortage this Thanksgiving.

Bob Lewis is a Minneapolis-based consultant with Perot Systems. Send e-mail to robert.lewis@ps.net, and visit his forum on InfoWorld Electric at <http://www.infoworld.com>.



Sandia Labs: Testing is the easy part

■ Web applications increase variables

By Blaise Zerega

THE FIRST THING IT departments discover about software testing is that "automated" is not "automatic." Testing applications requires a lot of work, planning, and learning. At Sandia National Laboratories, software tests must recognize browsers, objects, and Java applets for distributed applications that will be deployed across multiple platforms. And, different applications must meet varying standards of performance, reliability, and security.

"My advice is, leave yourself one or two weeks for learning the ins and outs of the piece of application to be tested. Every application has a nuance that needs to be overcome," says Ann Hodges, senior member of the technical staff.

Hodges and the testing staff evaluate applications used for purposes

such as seismic treaty verification for the U.S. Air Force, or tracking disposal of low-level nuclear waste, or more simply, for administrative tasks used by the 8,000 employees at Sandia.

Sandia is a multi-program laboratory funded primarily by the U.S. Department of Energy, with main facilities in Albuquerque, N.M. and Livermore, Calif. It was founded in 1945 as the Z Division of the Manhattan Project. Today, Sandia works with government, industry, and university groups on major research and development projects in areas of national defense, economic competitiveness, and environmental protection.

Sandia made the move to automated load testing in August 1996, evaluating the performance of Electronic Timecard, a custom Web-based application used by employees to submit timesheets. Sandia installed Mercury Interactive's Loadrunner to overcome the barrier of testing manually a large-scale multiuser system. With Loadrunner, Sandia simulated the server activity generated by

loads of 20, 50, 100, 150, and 200 concurrent users. The tests helped Hodges and her team uncover network bottlenecks native to the architecture, something often overlooked by IT people.

Hodges finds that most testing can be split into four phases: understanding the operational and architectural requirements of a particular application; determining if an application is supported by a particular tool suite (For instance, does Net Dynamics support PeopleSoft?); testing; and then two weeks of de-bugging and further testing at the transaction level.

"Of this process, running the actual test is the easy part," Hodges says.

Web-based application testing is more complex than testing client/server applications because of the numerous servers involved, such as firewall, proxy, and Web servers, plus the potentially large number of simultaneous users. Even with virtual users and simulated loads, "It's more difficult to predict performance of Web-based apps until you have a prototype," Hodges says.

To do true performance testing, Hodges adds, load testing is not enough. Knowledgeable person-

nel must perform data reduction and interpret findings.

"Testing allows you to get a notion of an operational profile or baseline. Then as developers make changes, you can determine whether changes help or hurt operational performance and advise them accordingly," Hodges says.

Ideally, Hodges says, developers and testers work in parallel. Using a team system, Sandia maintains roughly a 3-to-1 ratio of developers to testers. Testers evaluate each component of an application as development life cycles are completed, and help shape the application's final form. Testers also take steps to ensure that applications meet their performance specifications.

"Folks tend to concentrate on hacking out code, maybe do some operational testing as they go along. But they really don't worry about reliability, security, or performance. I like to think that they all go together," Hodges says. Sandia's initial purchase of Mercury Interactive's tools cost approximately \$80,000.

Asked to determine a return on investment, Hodges says the payoff is "knowing how an application will work without having to deploy it."



ANN HODGES, senior member of the technical staff, tests apps used at Sandia Labs and by its clients.

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Spotlight on Skills

Database skills highly sought after

By Margaret Steen

THE CLIENT/SERVER revolution has put database professionals at the center of company operations ranging from Web sites to sales tracking. Although this has made the database specialist's job more rewarding, it has also made it more demanding — for example, by increasing concerns about security. Recruiters, database specialists, and those looking to hire database professionals offer this perspective on the issues facing database administrators today.

What skills and experience are employers looking for in database professionals? Professionals with experience in relational databases, such as Oracle, Sybase, and Informix, are most in demand. (See chart below.) Oracle specialists are the most sought-after. Because of the central role of databases, those who work with them must also be able to work with people, both users and IT staff.

Because most employers want database professionals with some experience, entry-level positions can be difficult to find. Those in the

Average salaries for database professionals



field recommend that people trying to break into the database profession look for Internships that will give them the experience they need to land their first job.

Is obtaining vendor-specific database certification a good idea?

The value of certification in any area is open to debate, and in the database field certification hasn't quite caught on — at least not yet. Oracle last month launched a certification program for Oracle database administrators and is planning to add exams for other Oracle professionals. Sybase and Informix offer certification exams as well. But for now, the consensus in the field is that although certification won't hurt and could act as a tie-breaker for some jobs, experience still counts the most.

Relational database specialists' value growing

Increase in starting salary compared with previous year*

Job title	1997	1998
Database administrator, large shop	3.0%	2.1%
Database analyst, large shop	2.3%	1.8%
Relational database analyst, small shop	2.3%	4.0%

*All numbers are projections.

SOURCE: HARRISON CONSULTING CLIENTS

IT managers needed for education survey

AN IT education group is looking for IT managers to complete a short survey on continuing education. The survey covers questions such as, in what areas would IT managers like training, and how much time do they have for education.

The Association for Information Technologies (AIT) provides continuing education for IT managers through the Farmingdale campus of the State University of New York. The group conducts this survey annually. Anyone who fills out the survey will receive a copy of the survey results, including the *AIT Guide to Power Career Planning*.

If you're interested in filling out the survey, please send e-mail to mike_lackey@compuserve.com or call (516) 269-6713. The survey can be filled out via e-mail or fax.

1998 OUTLOOK

Where will the opportunities be?

By Steve Alexander Networking may be the most sought-after IT skill in 1998, according to two surveys by industry watchers.

"Throughout 1998 we will continue to see a strong demand in the network-professional

area for people to build infrastructure to support all the bleeding-edge technology coming down the line," says Greg Sclieppi, executive director of RHI Consulting, in Menlo Park, Calif., which recently polled 1,400 CIOs about what they thought the hottest jobs would be in 1998.

Preliminary results of a survey in progress by the Meta Group, in Reston, Va., also predict that networking will be a highly sought-after skill next year.

RHI's survey showed strong demand for networking professionals in all regions, but New England had the greatest number of CIOs (42 percent) who cited networking as next year's hottest job category.

Although some other industry surveys have ranked PC technical support, rather than networking, as the No. 1 skill that companies will be looking for in the near future,

Sclieppi says they are opposite sides of the same coin.

"The real news is they are among the top demands in these surveys," Sclieppi says. "As you build networks and deploy products over them, PC technicians and support people all kind of fold into the same demand category. Most often, PC-support professionals graduate to network expertise as the next level

of their career progression."

Both surveys also list project management as a top job for 1998.

The project-management people most sought after will be those capable of heading up very large projects and those who can take a global view of multiple IT projects and how they will affect each other,

says Kerriann Vogel, a senior research analyst at the Meta Group.

RHI's survey also identified Internet/intranet skills and programming as hot areas in 1998.

"We are seeing increased demand for Internet- and intranet-development skills that go beyond Web-page development into creating applications across the Web, such as Internet-sales applications or sales-force automation," Sclieppi says.

Demand for programmers is being driven in part by conversion to client/server technologies and by year-2000 projects, Sclieppi says. RHI found few regional differences in what jobs are expected to be most in demand next year.

Finally, the Meta Group's survey is identifying a new job category, business consultants, which is made up of people who act as liaisons between IT departments and business units.

"A lot of companies are just creating the business-consultant position because of the huge gap that exists between the business units and IT," Vogel says. "A lot of business units are buying their own software or doing their own desktop modifications, and it's very difficult for IT to keep track of all that."

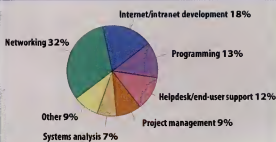
Steve Alexander is a free-lance writer in Edina, Minn.

LET US HEAR FROM YOU

What skills do you think will be in demand next year? Send your comments and suggestions to margaret.steen@infoworld.com.

Networking tops list of hot jobs for 1998

Percentage of CIOs listing job as hottest IT specialty*



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Provides component-level design and implementation planning within client support framework. Requires in-depth knowledge of Information Technology (IT), UNIX, Client/Server architecture, Korn and Perl scripting.

Application Acceptance Team Lead (Ref. Code AAL)

Provides leadership and guidance for component-level design and implementation planning within client support framework. Requires in-depth knowledge of IT, UNIX, Client/Server architecture and Korn scripting. Also requires four years experience working with IT/technical architecture in a UNIX Client/Server environment, including supervisory experience.

Application Management Manager (Ref. Code AMM)

Provides support to IT application users within client business units. Ensures applications are available to users according to service-level agreements. Eight to ten years progressive IT experience in production support areas is required. Supervisory, service-level agreement and operating-level agreement experience is desired.

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Provides project and personnel management for the product test area and ensures that quality and customer service levels are maintained in a high-performance team environment. Requires seven to ten years experience developing, organizing and managing software development/testing projects and developing work plans. Also requires experience directing team members in testing process, managing team capacity, workload and schedules and the ability to work in a highly matrixed, fast-paced, complex environment.

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DSP Firmware Developers: Experience implementing DSP algorithms for embedded systems required. Working knowledge of the x86 PC environment and in embedded firmware on T.I. "C5X DSP's a plus. Knowledge of data communications protocols and network protocols such as TCP/IP desired. (Job Code: DSPFD)

Embedded Firmware Engineers: Assembly language or DSP programming, preferably with Texas Instruments 320C25; 320C5x family of fixed point DSPs essential. 1-3 years experience in a real-time embedded programming environment a must. Debugging embedded software systems skills a plus. A background with modems, fax, ISDN standards, audio/voice compression, international homologations processes desired. Good problem solving, analytical and communication skills required. (Job Code: EFE)

ASIC Hardware Engineers: Proven track record in development of embedded systems required. Must have 3+ years of digital logic design for microprocessor-based cards, 2+ years with EPD, Altera, Xilinx, PAL, memory and peripheral design experience. High skill level in ASIC design and analog design required. Strong knowledge of DSPs, modems, and data/telecommunications preferred. BSEE required, MSEE preferred. (Job Code: ASIC)

Project Leaders: Provide technical leadership and direction in the performance of complex, technical engineering functions for a major project or multiple smaller projects simultaneously. Perform project management functions including establishing schedules, functional specifications, methods, etc. Interact regularly with internal and external customers. Define, set up, and communicate the structure of the product development team. BS/MSEE or CS with 5-7 years experience required. Ability to apply comprehensive knowledge of engineering principles, practices, procedures and methodologies essential. Project leadership skills a plus. Must be organized with ability to effectively manage projects and thrive in a fast-paced flexible environment. (Job Code: PL)

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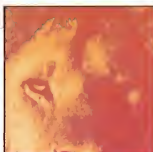
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VeriTest Battery Life Results in Hours**

TravelMate 7100 (233MHz)	8:25
IBM ThinkPad 760ED (133MHz)	2:38
Toshiba Tecra 720 CDT (133MHz)	2:38
Dell Latitude Xpi (150MHz)	4:15

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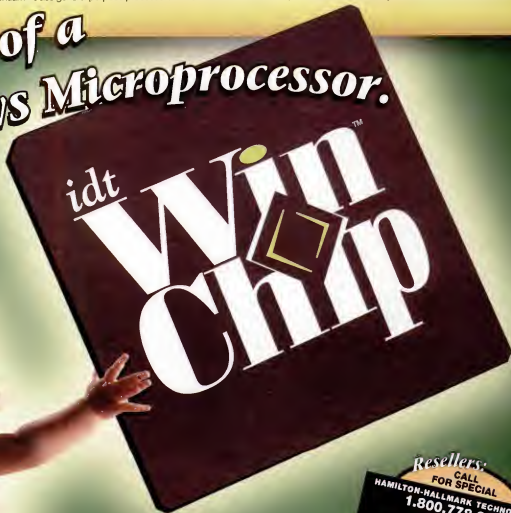
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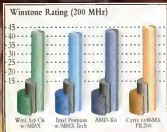
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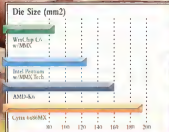
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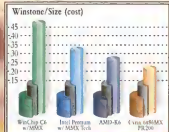
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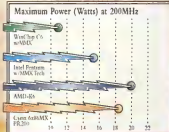
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► Applications-brokering software

Promising Tarantella falls short

Continued from page 1

to deliver on SCO's promise of providing universal client access to applications running on any platform.

Tarantella is an application-brokering platform, meaning that the product works between applications running on various back-end machines, such as a Unix host and a browser-based client, to provide an interface to the application. Overall, we found that this approach worked well. On its own, however, Tarantella delivers browser-based access only to Unix programs. To access other applications, such as a mainframe or Windows programs, you'll need products from third parties.

For access to Windows applications Tarantella requires Network Computing Devices' (NCD's) WinCenter, which provides a remote interface to those applications for X-Window clients (or servers, as

they're called in the Unix world). Tarantella treats the WinCenter-provided program as a typical X-Window application when presenting it to a browser-based client. The trick is that WinCenter actually runs on Citrix's WinFrame platform, which provides remote access to Windows applications running on a modified version of Windows NT 3.51 server.

Fortunately, NCD ships a copy of WinFrame with its WinCenter product, so there's no further charge; but you'll still pay extra if you want to use WinCenter with Tarantella, which already carries a steep price tag on its own, starting at a price of \$395 per user. The thing that really left us scratching our heads was that we could already get browser-based access to Windows applications through WinFrame. So why all the application roundabout with WinCenter and Tarantella?

SCO also turns to third parties to provide access to mainframe or minicomputer applications. Although you can use Telnet to connect to a mainframe or AS/400 from a Tarantella-hosted terminal session, there is very little benefit to this approach over using a typical Telnet application on your client machine. There are, however, benefits from using a richer 3270 or 5250 terminal-em-

THE BOTTOM LINE



Tarantella

SCO's Tarantella provides browser-based access to Version 1.0 Unix applications, but fails to deliver support for Windows and mainframe applications without help from third-party applications.

- **Pros:** Easy to install; works with local user-security profiles; can provide access to applications running on a number of back-end servers; allows client to resume sessions if disconnected.
- **Cons:** Privacy for its capabilities; requires extensive third-party support to deliver non-Unix applications; Java reliance will affect remote application performance.

- **SCO, Santa Cruz, Calif.,** (800) 726-6649, (408) 425-7222; fax: (408) 428-4227; <http://www.sco.com>.
- **Price:** Starts at \$395 per user for a single-user license; \$200 per user for a 500-user license.
- **Platforms:** Tarantella server runs on SCO UnixWare 2.1.2 and later and Sun Solaris 2.4 and later with a CGI-compatible Web server.

ulation program; SCO has formed partnerships with Computer Network Technology, Interface Systems, and StarQuest to provide these capabilities through Tarantella. For now, this capability requires an extra purchase, but SCO plans to add

to Tarantella the host connection for 3270 and 5250 terminals sometime in 1998.

Plenty to like

We did like the overall interface of Tarantella, which provided each user with a Java-based console or "Web-top" that contained a menu of each user's assigned applications. And the applications that we set up and used performed adequately. However, given the performance of the Java code, you can expect to wait while applets initialize when connecting to Tarantella — especially with slow clients or over a slow connection, such as with a modem. The product worked well on the different platform and browser combinations we tested, although we did notice some problems, particularly on our Macintosh client.

We were able to set up new applications and users fairly easily, as well as assign users a number of applications. When creating user accounts, the product by default refers to the local user account on the Unix host to authenticate clients for Tarantella. This is convenient, but it also means that we had to set up two accounts — one on the Unix host and one in Tarantella — to get the job done. We felt the product could have done more to synchronize users' accounts on both systems.

One welcome feature allowed us to resume a client's access to a run-

- **BeOS, Preview Release 2 ...** 112
- **SQA Suite 6.1, LoadTest Edition ...** 116
- **CorelDraw 8, beta ...** 118
- **Puffer, Version 3.0 ...** 120

IBM CORRECTION

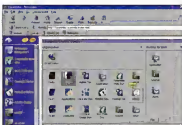
Two weeks ago, we reviewed a PC workstation, the IBM IntelliSense M Pro, and found it the slowest of three systems we had tested. (See "IBM, Compaq PCs step into the workstation market," page 148.) We later realized the system was configured in a way that slightly slowed its performance. For a correction and update, see page 10.

ning application if, for example, the user's connection to the server terminated. We were also able to kill suspended user sessions with the Control Center. However, we were unable to delegate to users any administrative functions without having to grant full management access to Tarantella.

One key advantage of Tarantella is that it can provide access to applications running on various back-end servers, and not just to the server hosting Tarantella. (This is unlike Citrix's WinFrame and Microsoft's forthcoming multiuser version of Windows NT, code-named Hydra.) Tarantella's approach gives it an innate distributed-processing architecture. Unfortunately, there is no way to configure the product to automatically balance the load for a particular application across several back-end servers. (You could achieve this end, however, through a painstaking manual process.)

Tarantella's approach to universal application delivery is certainly a good concept, and this debut offers some nice capabilities. However, the product just doesn't go far enough in this release to provide universal client access to cross-platform applications and hosts. If you're willing to bear the price, and you're concerned only with delivering Unix applications to disparate client operating systems, then Tarantella may be a good choice for you. But, if you need to deliver Windows applications and mainframe connectivity, then be prepared to write more than one check.

Jeff Symons (jeff_symons@info.world.com) reviews enterprise platform services. **Jan-Han Szeto** (lahan_szeto@info.world.com) is a contract technology analyst in the field of Web and application development, and network management.



TARANTELLA PROVIDES rich, Java-based access to applications through a Web browser. Administrators can create new users or set up applications fairly quickly.

► Linux OS

Tired of NT? Put on your Red Hat

By Eric Hammond

CREATING a Web site or a corporate intranet is a daunting task. Implementing a Web server with common Internet goodies such as Net news, mail, and FTP servers along with directory services and back-end development tools can be a real challenge, financially and technically. And we haven't even gotten to a database yet.

There is more than one Unix solution to this problem, but one of the most attractive is Red Hat Software's Red Hat Linux 5.0, which provides everything you need to get an Internet or intranet server run-

ning in one afternoon. This release includes easier installation and some nice goodies such as the Real Media server and client, as well as commercial backup software.

Unix has a reputation for being difficult to use and administer, but when you take a look at the user interface provided by the Fine Virtual Window Manager, you'll almost think you are looking at a Windows 95 box, and administering a Linux server is no more difficult than properly running Windows NT.

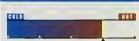
There's no question that Red Hat is a complete Internet server in a box. I like the fact that the CD comes with all of the TCP/IP services that

you could possibly want in a Web or intranet server, including the Apache Web server, a mail server, a news server, a domain name server, a gopher server, and others. The release also includes development tools such as Perl and C/C++ to facilitate application development. With 5.0, Red Hat now includes a freeware SQL database engine.

The Real Media server and client software let you serve up streaming audio and video from your Web site and also view these protocols when browsing the Web. Although Red Hat doesn't include the Netscape Navigator browser, a Linux version is available from Netscape's Web site. Multimedia gets a boost with Sound Blaster support. With 5.0, Red Hat also offers BRU 2000, a commercial automated tape backup-and-restore facility.

► **RED HAT** page 112

THE BOTTOM LINE



Red Hat Linux 5.0

Red Hat Linux is a complete Internet or intranet in a box for a price you can hardly turn down. If you don't mind using alternate support channels, this package has everything you need.

- **Pros:** Inexpensive; easy install; good documentation.
- **Cons:** No telephone support.

- **Red Hat Software Inc.,** Research Triangle Park, N.C.; (888) 733-4281 (toll-free), (919) 547-0012; fax: (919) 547-0024; sales@redhat.com; <http://www.redhat.com>.
- **Price:** \$49.95.
- **Platforms:** Linux or compatible systems.

Operating systems

BeOS shows promise as an alternative to Mac OS

■ But whether IS managers will buy it depends on application, hardware support

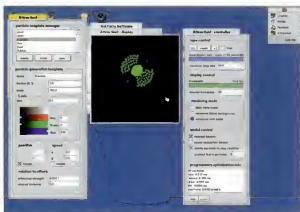
By Brad Morrey

FEVER WISH you could load a brand-new operating system, one unencumbered by compromises to ensure backward compatibility? Be Inc. has set out to do that with its BeOS, which has been designed from scratch. Not being bound to legacy code, both drivers and APIs, free the BeOS from many restrictions.

On the other hand, BeOS currently lacks hardware support, which reminds me of when OS/2 Warp was released. IBM's operating system was great if you could get it running on your hardware but painful otherwise. BeOS seems to be in the same boat: I needed two computers and three hard-drive configurations before I had BeOS installed and stable.

For BeOS to become popular, for it even to carve out a useful niche among IS managers, it will require considerable application and driver support. Based on my review of BeOS, Preview Release 2, which is a beta version, I can see this is already troublesome, although it is too early to be certain.

Because BeOS is a new operating system, it needs hardware drivers written specifically for it. If you have a high-performance Macintosh, you probably will not be able to take advantage of all of its capabilities. There currently is no sup-



ONE MULTIMEDIA APPLICATION included with BeOS is a real-time 2-D physics demo, with rendering controls and recording.

port for external SCSI boards, for example, nor was I able to access any Macintosh files when running the BeOS.

I was, however, able to use my SuperMac 5900's substantial video card, and developer fredlabs inc. (<http://www.fredlabs.com>) has written a Mac OS emulator for the BeOS that should alleviate some of the pain of converting.

The BeOS is a dual-boot-only operating system on the Mac. (The Intel version will run alone.) When I first inserted the BeOS CD-ROM into the drive, I was able to install three small files into the Mac System folder; these included an ex-

tension that took over booting and allowed me to start the BeOS. I liked the dual-boot feature, which let me test this operating system and still have access to Macintosh applications, although not simultaneously.

The Preview Release included several trial applications. Among the business tools were a word processor, a simple spreadsheet, a limited Web server, and a POP3 and SMTP e-mail client. There also were several multimedia creation applications.

I very much liked all of these applications; the interfaces were intuitive and they fit in well with the rest of the BeOS. The Paint program automatically start during boot-up. This gives the administrator another way to ensure security and performance — by not starting services that will not be used.

You can't beat Red Hat Linux for features-to-price ratio. It's an all-in-

one quickly converted my TIFF file to a JPEG file, for example, and then easily resized it.

I could not compare performance directly to programs running on Windows 95 or on Windows NT, but this operating system certainly takes better advantage of the PowerPC hardware than does the Mac OS.

One major question is the availability of applications to run on this well-designed, high-performance operating system. The development IDE is based on C++-Well-written Macintosh applications may require minimal ports, according to company officials, but other programs may need complete rewrites. One possible solution to this receding problem would be to use Java, which promises "write once, run anywhere" capability. MetroWorks has ported the Java Development Kit, Version 1.0.2, to the BeOS, but you must purchase MetroWorks' development environment CodeWarrior.

I was not able to test Java on BeOS, but the operating system's core multitasking, graphical, TCP/IP-oriented nature should make Java pop fast if the virtual machine is well-written.

There aren't many Java applications selling today, but if your company is writing Java code and needs access via Macintosh hardware, BeOS might be an alternative. Rhapsody is supercharged with Java down to its APIs, but Apple's next-generation operating system is still a ways off and, unlike BeOS, has not yet been optimized for multiprocessors. The BeOS might even be an interim solution on the way to Rhapsody.

BeOS, Preview Release 2

BeOS provides a high-performance, multi-processor-ready alternative to the Mac OS. Might it actually catch on? That depends on application support.

- **Pros:** Tremendous performance improvements compared with Mac OS; designed for multimedia authoring and easy program writing; optional third-party Java support.
- **Cons:** Lacks application and hardware support; does not run on some Macintoshes.
- **Be Inc.,** Menlo Park, Calif. (650) 462-4100; fax: (650) 462-4129; info@be.com; <http://www.be.com>.
- **Price:** Not yet announced.
- **Platforms:** Macintosh or compatible systems with PowerPC 603 or PowerPC 604e Intel or compatible systems.
- **Ship date:** First quarter 1998 for Intel and PowerPC.

study is supercharged with Java down to its APIs, but Apple's next-generation operating system is still a ways off and, unlike BeOS, has not yet been optimized for multiprocessors. The BeOS might even be an interim solution on the way to Rhapsody.

I liked the BeOS. It has many advanced features, and once it was installed, I found it extremely fast and stable. I suspect, however, that many Macintosh customers and developers may be content to wait for Rhapsody, even if the wait is a long one.

Brad Morrey is a former InfoWorld Test Center analyst with an eye for Java and the Macintosh. He can be reached at brad@morrey.com.

Red Hat

Continued from page 111

This release includes the X Window server Metro-X, a commercial product providing a GUI environment on a Unix box. I was disappointed, however, that Metro-X wouldn't work with my 53 Virge GX graphics adapter. Red Hat recommended using the included XFree86, a freeware X Window package with fewer bells and whistles but more stable video drivers.

Red Hat's installation is much improved. The most promising new feature is Disk Druid, a tool that gives a more intuitive interface to the difficult Fdisk utility, which you must use to partition the hard drive for Linux.

Disk Druid is a step in the right direction, though I'd like to see a bit more work done on it. On one

installation, Disk Druid seemed to interfere with the creation of the master boot record at the end of the install. I had to go back and reinstall manually using Fdisk.

I liked how the installation now prompts for which services to auto-

matically start during boot-up. This gives the administrator another way to ensure security and performance — by not starting services that will not be used.

You can't beat Red Hat Linux for features-to-price ratio. It's an all-in-

one Internet solution for just \$50. If you need a fuller commercial product, check out Caldera. But if you aren't afraid to get your hands a little dirty, and you don't mind e-mail and net news as support options, Red Hat Linux 5.0 should be at the

top of your Internet server shopping list.

Eric Hammond (eric_hammond@infoworld.com) has covered Unix applications for longer than he thinks is wise.

LINUX: A FINE, FREE WEB SERVER

There are many choices for creating Web sites and intranets. Unix has a lead of several years over Windows products, but the momentum of the latter combination is gaining ground. Commercial Unix solutions can require expensive hardware and support, and they do not always ship with all of the tools you need to get the job done.

But Windows NT isn't cheap either, especially when you con-

sider the hardware horsepower that it takes to make Windows NT run well. And at every turn, with NT you'll find yourself taking another step down the proprietary highway.

There is an alternative, however. Linux is a free version of Unix that will run quite well on a 486 with 32MB of RAM and 500MB of disk space. It also is available for Sparc, Alpha, and Macintosh hardware. You can get onto the Web and down-

load everything you need for free to get a Linux box running.

Also, if you need support, there is a thriving community of Linux users just waiting for your net news posting.

In addition to the free versions of Linux, several vendors offer commercial versions. These CDs bundle additional free and commercial software, which saves you from having to download it from the Web. These vendors usually price

up the Linux distribution with automated installation and administration tools.

They also offer varying levels of support — even as much as around-the-clock, toll-free support — for a fee. Two of the major vendors in this arena are Caldera and Red Hat.

Caldera offers two versions of OpenLinux, essentially a client and server, and includes a commercial office suite, a database, and the Netscape

FastTrack server at a price of approximately \$400. Caldera also offers telephone support.

Red Hat Software offers one product, Red Hat Linux 5.0, which is the bargain-basement champion of the Internet server arena, weighing in at approximately \$50.

Although Red Hat does not offer telephone support, it does provide excellent e-mail support, and the newsgroups are a terrific source of information.

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 (G) Micron (H) NEC-NOW (I) Toshiba

7. How many units are you planning on purchasing?

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9. How much RAM do you want installed?

10. What type of hard drives do you want installed?

- (A) SCSI (B) IDE (C) Other

11. What capacity hard drives do you want installed?

12. What type of video do you want installed?

- (A) SVGA (C) Active Matrix VGA (E) Other
 (B) VGA (D) Passive Matrix VGA

13. What peripheral devices do you want installed?

- (A) Poppy (C) SCSI (E) Sound Cards
 (B) CD ROM (D) Tape Backup (F) Other

14. What operating systems do you want installed?

- (A) MSDOS (D) Windows NT (G) UNIX
 (B) Windows (E) OS/2 Warp
 (C) Windows 95 (F) NetWare

15. Other specifications



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THINKING OUT OF THE BOX™

► Software-testing tools

SQA Suite nicely automates app testing, quality assurance

By Maggie Biggs

IN ANY software-development project, testing and quality-assurance practices need to be on par with other elements, such as well-defined business requirements, software design, and development tools and standards. The LoadTest Edition of Rational Software's SQA Suite 6.1 provides a good set of automated tools that will allow you and your team to make quality assurance and testing an integral part of your development cycle. Any serious development effort should have testing and quality assurance included from the start. SQA Suite facilitates this nicely with several integrated modules: SQA Process provides a clear methodology for your efforts; SQA Manager defines testing requirements and review progress; and SQA Robot

records and plays back test scripts. The LoadTest Edition I reviewed adds the SQA LoadTest module, which aids in stress-testing the server portion of your application.

All of the tools in the LoadTest Edition of SQA Suite share a common data repository that can be accessed by 16-bit and 32-bit clients, and by some browsers. This made it easy to share data from the design through testing phases. The most interesting module was the LoadTest component itself. This tool let me create virtual users and a pool of data to feed a variety of application load factors onto the server side of my application. I think software teams will find this tool quite valuable, especially for stress-testing Web server loads.

Above the SQA repository is SQA Process, a layer that contains all of

the base rules you will use to define, carry out, and gauge your testing success. The product comes with a default methodology that will support most environments, and SQA provides an option to further customize the methodology.

After you have defined the initial business requirements, your quality-assurance team can use SQA Manager to begin creating test plans, procedures, and requirements. I thought the Manager interface and its prompts for creating test definitions were simple to navigate. The Manager seamlessly links your efforts in creating the test requirements and procedures, and has further connected these with your work on the test plan.

Especially useful are the Manager's import and export facilities, which allow you to exchange test definitions with other products.

SQA Manager also handles test-cycle tracking, defect management, and reporting quite well. You can instantly get a snapshot of exactly where you are in the test process; this helps you properly allocate and use your resources.

Rational shines brightly with

SQA Robot's robust handling of test scripts. You can create and execute test scripts on their own or integrate them with the requirements and procedures created in SQA Manager.

During the creation of test scripts, SQA Robot can capture data content and properties for application objects that are either visible or hidden. Object support has been enhanced in this version; you can now capture Visual Basic, PowerBuilder, Centura, Delphi, and PeopleSoft objects, as well as Win32 controls. Capturing via browser is also available.

In executing my test scripts, I was able to quickly capture object data and properties in my Delphi customer-service application. After my test scripts ran, the results were then available in the Test Log Viewer window.

SQA Suite brings very good value to software-development teams through its integrated, repository-based set of tools that neatly match the software life cycle. For those serious about creating and implementing high-quality software, SQA Suite is well worth evaluating.

THE BOTTOM LINE



SQA Suite 6.1, LoadTest Edition

Tightly linked software-testing modules and an underlying repository will automate and manage your quality-assurance efforts, reduce project costs, and speed implementation timelines.

- **Pros:** Capture attributes and data content of user data objects; object-level integration and testing available for a variety of environments; stress-test for Web servers.
- **Cons:** No uninstall program provided; online help lacks sufficient details.
- **Rational Software Corp.**, Burlington, Mass.; (800) 228-9922; fax: (617) 229-3780; <http://www.rational.com>.
- **Price:** \$9,995.
- **Platform:** Windows (LoadTest module supports Web servers via HTTP).

Senior analyst Maggie Biggs (maggie_biggs@infoworld.com) specializes in application development.

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PDF-001-1-95

► Windows graphics suite

CorelDraw boosts interface, performance, tools

By Mike Heck

CORELDRW made its debut almost nine years ago, and with each succeeding release has become more sophisticated—and occasionally harder to use. Although CorelDraw 8 incorporates new features, its tools are more intelligently arranged and require fewer steps to use, which should gratify graphics designers and illustrators. With CorelDraw 8's enhancements, it holds up well against the likes of Adobe Systems' Illustrator 7.0, Macromedia's FreeHand 7, and Denim Systems' Canvas 5.0.

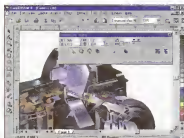
CorelDraw's Pick tool is an excellent example of the new refinements. You can move objects and alter their basic shape without exiting the current drawing mode, which saved me substantial time and effort. You can also modellessly edit text.

Toolbars, dialog boxes, and the

main toolbox have assumed a new flat look (where selections become more prominent when the mouse moves over them), so the whole interface appears a lot cleaner. More importantly, dialog boxes are smaller and more consistent between CorelDraw and Corel Photo-Point 8. In addition, you can dock various palettes and roll-ups anywhere in your

workspace; when multiple windows dock, the product neatly groups them with tabbed pages.

A high-quality display setting lets you more accurately preview results, and CorelDraw 8 includes additional interactive functions. For example, the Distortion tool let me apply various contortions to objects in real time. With the newly interactive Envelope



CORELDRW's new flat look and interactive tools reduce designers' workloads.

feature I changed an object's perspective on screen.

Similarly, the Free Transform tool lets you rotate, reflect, scale, or skew any object while viewing a live, on-screen update. Also, Smart Object Duplication remembers the way in which the object was last moved and uses this information to place the next duplicate.

You may not care that the Undo feature now works across File Saves,

until it rescues work that was inadvertently saved over the master version of a file. When I exported a drawing to HTML, CorelDraw 8 used tables, layers, and cascading style sheets to preserve the document's layout.

In addition to streamlined menus and dialog boxes, Corel Photo Paint 8 adds low-resolution image editing. This feature creates a proxy of the original high-resolution file, which greatly speeds performance.

Image edits are recorded and saved with the proxy—and the Render command plays the commands back onto a copy of the high-resolution file at any specified resolution.

CorelDraw 8 affords designers many well-conceived usability improvements and new features—more than enough to warrant purchasing the upgrade. And considering the three main applications and multiple utilities, CorelDraw certainly offers

the highest value to anyone considering an illustration suite for the first time.

Mike Heck (mike_heck@infoworld.com) is manager of electronic promotions at Unisys, in Blue Bell, Pa., where he's responsible for online services.

THE BOTTOM LINE

CorelDraw 8, beta

Graphics designers and illustrators should find this suite of professional-class applications for illustration, page layout, photo editing, and 3-D modeling easier to use and even more versatile.

- **Pros:** Can edit notes while using any drawing tool; more intuitive and interactive operation; new text functions and special effects; improved import and export filters; supports MMX processors and Adobe PostScript 3.
- **Cons:** None significant.

- **Corel Corp.**, Ottawa; (800) 772-6735; (613) 778-8200; fax: (613) 761-9176; <http://www.corel.com>.
- **Price:** \$695; \$249 upgrades; \$139 academic version.
- **Platforms:** Windows 95, Windows NT 4.0.
- (Macintosh version available March 1998).
- **Ship date:** December.

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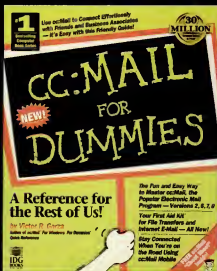
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► E-mail and file-encryption software

Puffer 3.0 acts as secure alternative to PGP Mail

By Joe Peschel

THE BIGGEST dilemma for IT professionals in securing e-mail and sensitive files is not deciding whether to encrypt but deciding which encryption program to use. There are plenty of programs available, and many of them are easy to use, but the cryptographic algorithms employed often lack the security of a proven cipher.

Puffer 3.0, from Briggs Software, is an easy-to-use encryption program, and it uses proven algorithms. The earlier version of Puffer served best as a file encryptor, using symmetric, or single-password, algorithms. (See Product Reviews, May 5, page 118.) Puffer also let you create self-extracting files for e-mail. Al-

though that method was an effective way of using a symmetric cipher for correspondence, you still needed a secure way to transmit the key.

Briggs has added public-key encryption to Puffer 3.0. A public-key encryption scheme is asymmetric and uses two algorithms and two keys, one public and one private.

Similar to Pretty Good Privacy's PGP Mail, perhaps the best-known public-key encryption program, users exchange public keys. You encrypt messages with your correspondent's public key and they decrypt with a private key. Likewise, the other user encrypts messages to you with your public key, and you decrypt with your private key.

I tested Puffer's public-key en-



PUFFER 3.0 lets you use public-key encryption for e-mail, using a common algorithm and choice of symmetric keys.

crypting first. Creating the key ring and generating the key was a simple process. You can generate 512-bit, 1,024-bit, or 1,536-bit keys, and you can also set a date for the expiration of the key, which is convenient if you want to change your public key password (of at least 10 characters) often.

I created a 1,536-bit key, which took a few minutes because the number generated underwent primality testing. Puffer will let you speed up the process if you choose to use pre-generated prime numbers. After I created my key I could choose which symmetric cipher to use. Puffer makes it easy to encrypt

files, or to encrypt its own editor's content. Also new is the capability to configure an e-mail client for use with Puffer.

The product now includes a mechanism for message recovery, called secret sharing. This is a company assign several trustees to recover a message. For instance, you might assign five trustees, requiring that three authorize a recovery operation before recovering a message.

It's an option not everyone will want, but it seems a smaller privacy intrusion than the message recovery in PGP Mail, which allows one person to recover any message. At least with Puffer you can require several trustees.

Puffer still lets you do single-password symmetric encryption with options that let you create self-extracting files, or archives of as many as 1,000 files, though I wish you could easily add to the archives by dragging and dropping. Puffer also still includes its fine Utility tool, which securely wipes files and frees



THE BOTTOM LINE

Puffer 3.0
Puffer is a reliable encryption program suitable for protecting both e-mail and files.

- **Pros:** Public-key and private-key encryption; secure-wipe utility; secret-sharing message recovery mechanism.
- **Cons:** Difficult to add files to single-password protected archives.

■ **Briggs Software**, Houston, (800) 242-4755; (713) 524-6394; briggs@briggsoft.com; <http://www.briggsoft.com>.

■ **Price:** \$29 for single copy; multiple licenses available; downloadable from ComServe.

■ **Platforms:** Windows 95, Windows NT, and Windows 3.1.

and slacks space.

You won't find any public-key servers for Puffer, yet it's a good alternative to PGP Mail.

Joe Peschel (jpeschel@aol.com) covers security programs and other utilities.

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FROM THE ETHER • BOB METCALFE

Have the telcos actually bought and paid for tamed antitrust bulldogs?

MUCH TO THEIR surprise, I've taken to thanking people in government service. There should be fewer of them, of course, but we do need some good ones. What I can't figure out is why, except for my thanks, anyone good would put up with the hassles.

Last week, I thanked Daniel Rubinfeld, Deputy Assistant United States Attorney General for Economic Analysis. He didn't say, "You're welcome" because I was hassling him at the time in preparation for the following little expose.

Just remember, I'm out to break the telephone monopolies, including especially the 1,200 local exchange carriers (LECs), which meet regularly in restraint of trade at the United States Telephone Association (USTA). (See "Illegal business practices, spreading lies just business as usual for Baby Bells," Aug. 11, page 111.) USTA members' combined revenues top \$100 billion, for which they do not compete, period. And like Microsoft, they're hot to leverage their monopolies into emerging Internet markets. Meanwhile, they overcharge for inadequate local-loop communications. LECs are a bandwidth bottleneck between us and the Information Age.

So, why doesn't the Department of Justice have an antitrust suit against the USTA? And, given that the only thing worse than a few big regulated LECs is fewer, bigger unregulated LECs, why did the Justice Department allow SBC to buy PacBell and Bell Atlantic to buy Nynex? Is the Justice Department too busy with Microsoft to be working the LEC antitrust case or has the Justice Department been "captured" by the LECs?

Consider the capture of Daniel Rubinfeld. In September, the Justice Department announced Rubinfeld's appointment as Deputy Assistant Attorney General for Economic Analysis (<http://www.usdoj.gov>). His overall economic analysis responsibilities include competition among LECs. The Justice Department said Rubinfeld is highly qualified — with, for example, a Ph.D. from MIT and a professorship at the University of California at Berkeley.

What the Justice Department did not say is that Rubinfeld is a principal of the Law and Economics Consulting Group, in Emeryville, Calif. It's probably a coincidence that LECG's initials are LECG followed by G.

A major portion LECG's business is consulting, expert testimony, and litigation support for companies on antitrust and regulatory matters. LECG's Web pages do not list its clients (<http://www.lecg.com>).

The news is that LECG principals plan

soon to cash in through an initial public offering (IPO) of stock. (See the IPO filing at <http://www.sec.gov/Archives/edgar/data/104749/0001012870-97-001980.txt>.) LECG billed \$20 million in the first half of 1997, and business is so good that Rubinfeld's 4.9 percent of LECG's revenues are from LECs, including Ameritech, Bell Atlantic, Indiana Bell, Nevada Bell, Nynex, PacBell, SBC Communications, US West, and the USTA.

So Rubinfeld heads the Justice Department to cash in through an initial public offering (IPO) of stock. (See the IPO filing at <http://www.sec.gov/Archives/edgar/data/104749/0001012870-97-001980.txt>.) LECG billed \$20 million in the first half of 1997, and business is so good that Rubinfeld's 4.9 percent of LECG's revenues are from LECs, including Ameritech, Bell Atlantic, Indiana Bell, Nevada Bell, Nynex, PacBell, SBC Communications, US West, and the USTA.

But wait — sources estimate that 25 percent of LECG's revenues are from LECs, including Ameritech, Bell Atlantic, Indiana Bell, Nevada Bell, Nynex, PacBell, SBC Communications, US West, and the USTA.

So Rubinfeld heads the Justice Department

ment's analysis of competition among LECs and holds millions in stock, the value of which is tied to satisfying LEC clients.

Rubinfeld returned my call immediately. He told me his LECG holdings were long ago disclosed. In accord-

dance with the Justice Department ethics policies, he recuses himself from matters relating to clients of LECG. The SBC and Bell Atlantic acquisitions were completed before he arrived at the Justice Department.

Rubinfeld assured me he would not act improperly to benefit LECG clients. He invited me to check up on the reputation that won him his high office. He didn't enter government service for the money, but is a liberal Democrat who's making considerable financial and family sacrifices for the honor of serving his country.

I believe Rubinfeld and invite you to join me in thanking him again for his government service. I believe him, by the way, not because he's a liberal Democrat, but because he's a

graduate of MIT, where I'm president of the alumni association.

But, I ask you, is recusal a sufficient remedy for appearances of conflict such as Rubinfeld's? Is the point of view of the LECs

so pervasive among Rubinfeld's colleagues that recusal is mere window dressing?

Consider that another LECG principal, Richard Gilbert, held Rubinfeld's current Justice Department job several years ago. And that Laura Tyson, former head of President Clinton's National Economic Council, joined Ameritech's board of directors shortly after leaving the White House to become a partner in ... LECG.

Does not bode well for demonopolizing the LECs.

Technology pundit Bob Metcalfe invented Ethernet in 1973 and founded 3Com in 1979, and today he specializes in the Internet. Send e-mail to metcalfe@infoworld.com.



NOTES FROM THE FIELD BY ROBERT X. CRINGELY

I see a precarious future in which everyone will be shameless for 15 minutes

I'M REALLY NOT SURE about TV. I was once in an elevator in a hotel fitted with a wall-mounted screen showing CNN. I stared in mute horror as a grave news droid told the story of the Japanese tug-of-war championship that went horribly wrong: Two contestants had wrapped the rope around themselves, and both had their left arm torn off. We were spared the sight of the stumps, but CNN made sure we saw close-ups of the victims' faces. Isn't global communications a wonderful thing?

Why are ashamed of being Norwegian?

There's a reason I'm thinking about the media. At Comdex last week a European company called Scala showed off impressive technology that could bring the wonders of TV to a PC near you. It lets corporations pipe you the kind of cheese infomercial you see in airports and hotel rooms, now used using standard Web technology. The backend stuff is powerful enough to use broadcast and network technologies that effectively turn every PC into a receiver for Scala channels: Imagine a PC showroom in which Compaq could broadcast its latest price cuts — in real time — to awestruck shoppers. When I left Scala's suite it was schmoozing a PC OEM, and it's talking to all the big ones.

If Intel buys in, too, expect Digital Jam smeared over your notebook quicker than you can say MMX.

Why are ashamed of being absent?

Where's Brad Silverberg? The Microsoft senior VP, who took over the applications and Internet-client group almost one year ago, took a leave in the summer, and Microsofters from different product groups say campus sightings have dwindled to nothing in recent months. Except for the occasional event, such as the Internet Explorer 4.0 launch in San Francisco on Sept. 30, Silverberg seems to have vanished from the Emerald City. Also absent without leave is Hewlett-Packard's throbbing ORB Plus update middleware. The rumor is this object request broker will join Sun's NeoORB in the happy hunting grounds where doomed software projects go to die.

Be ashamed

During bill's content-free keynote at

Comdex on Sunday night he was clearly running for president. The famously wooden type mentioned his daughter's affection for Barney, was endorsed by the U.S. Marines, and made the audience squirm during his white-boy routine with the admirably tolerant Kareem Abdul-Jabbar ("So Kareem, I hear you like jazz ..."). The only thing missing was a thick slice of apple pie. The presidential pitch makes good sense if you're trying to drum up popular support during a painful and important investigation by the Department of Justice. After all, Janet Reno hasn't been able to lay a glove on bill.

As a follow-up, Gates was photographed in compromising human positions at a party on Monday night and even shown dancing with a pretty woman! In a short dress! Who wasn't his wife! Monopoly, schmopoly: I say he's just a regular billionaire and we should get big government off his back ... The mainstream media lapped it up, but we all know that bill went back to his hotel alone, checked his e-mail, and got on with the job of putting a Windows PC in every home, on every desk, throughout the world.

(Past: Scala's engineers live in Norway — pass it on.) Give me a call at (650) 312-0555; fax me at (650) 286-2775; or send e-mail to me at cring@infoworld.com.



DOWN TO THE WIRE · NICHOLAS PETRELEY

We can toss the leading myths about Java into the bottomless pit of openness

BY NOW, I'M SURE you've read that the International Standards Organization (ISO) has approved Sun Microsystems' plan to submit Java as a Publicly Available Specification. Shortly after hearing the news, I surfed the Web for opinions on this latest development.

Surely this would spark discussion about pure Java having a better chance of prevailing over the potential splintering of the language. To my surprise, I instead found pundits spouting tired old mythology about Java. It is about time some of these myths were exposed once and for all. So I've tackled three of the biggest:

Myth No. 1: Java is just a language.

To say that Java is just a language is like saying a television is just a monitor. Neither statement is entirely false, but both are misleading because they recognize only the most visible part of the system.

A television consists of a monitor and a tuner. You can take away the tuner and still have something useful (monitors work great

in a bank with security cameras). But for most people, the monitor only has real value when you add the tuner and it becomes a television. Only then can they receive all of the platform-neutral information on the airwaves and cable.

Likewise, Java can be useful to some people as a language. But for most people, it is the Java Virtual Machine (JVM) that makes Java valuable because the JVM is what allows you to receive platform-neutral applications.

Perhaps the significance of Java would have been clearer if Sun had given the Java/JVM combination a special name like "a regular coffee" so pundits could tell the difference between a monitor and a TV.

Myth No. 2: Java will fail just like previous attempts to create platform-neutral lan-



guages have failed. I call this the Wile E. Coyote myth. In the cartoons, Wile E. Coyote pulls the pin of a hand grenade and drops it into the cockpit of an Acme remote-control plane. The plane zips off toward the Road Runner as the grenade spins in midair and then explodes in the pitiful face of Wile E. The coyote never thinks to tape a grenade to the plane and try this plan again. Why? If the idea didn't work once, it never will.

Now applying this kind of thought to computer products and imagine where we'd be today if everyone had given up on graphical user interfaces because the Apple Lisa flopped.

Your attention please: Java is not C. It is not P-Code. It is a unique, network-friendly approach to platform-neutrality that has emerged at precisely the right time. According to Metcalfe's law, the value of a network increases exponentially with the number of nodes. It follows that any thing that leverages every possible node in a

network likewise increases exponentially in value. Java promises to do exactly that.

Put another way, platform-neutral languages failed in the past in part because there were never enough connected nodes to make the idea of a platform-neutral language sufficiently valuable.

Myth No. 3: In order for Java to succeed, Sun is going to have to make it an open platform by handing over control to a standards group.

Another writer recently dispelled this myth extremely well, and did so in just a few words. That writer is none other than Bill Gates. In his recent article in the *Wall Street Journal*, Gates stated, "Unlike other operating systems, Windows will always be an open platform..." Gates considers Windows open, presumably because anyone can write to the Windows API.

It would be preposterous to think Bill Gates, the founder of Microsoft, would be anything less than honest to the readers of as prestigious a publication as *The Wall Street Journal*, so we can take it on his authority that a platform can be open and remain under extremely tight control of a single company. Indeed, Microsoft controls Windows to such a fine degree that the company has even asserted its right to refuse a license even to someone who doesn't agree with details as tangential as splash screens, or Microsoft's preferred placement of icons on the desktop. That makes Java a virtual bottomless pit of openness by comparison.

Thank you Bill; myth dispelled.

Former consultant and programmer, Nicholas Petreley is editor in chief at NC World (<http://www.ncworldmag.com>). Reach him at nicholas_petreley@infoWorld.com or join his forum on InfoWorld Electric (<http://www.infoWorld.com>).

BETWEEN THE LINES · MARK TEBBE

Comdex proves smaller, cheaper, better continue to drive innovation

IN THE WEEK AFTER Comdex, most attendees complain about the crowds, the town, and the overwhelming show. But the great thing about Comdex is that you can always come back with a better understanding of the key products that will affect corporations. This year, the good news is that products are getting smaller, cheaper, and more manageable.

First, getting smaller — and eventually cheaper — are high-resolution display devices in the form of flat-panel displays. Available in a variety of sizes and shapes, many organizations will eventually want to replace their traditional monitors with these devices as they become more cost-effective.

Some observers project that prices should fall from today's level of \$250 per diagonal screen inch to less than \$50 per inch during the next two years.

Of course, few businesses can justify such an expense on displays, which is why manufacturers are packaging these high-end dis-

plays for high-end consumer systems. It wouldn't take a big stretch to see wealthy individuals buying Sony's 50-inch plasma display and plugging in a broadcast tuner for a very cool and hip television.

Gateway is taking this consumer opportunity seriously with its recently announced Dimension DMC product — a combined digital video disc, 3-D gaming, and Internet-surfing digital TV. The Dimension DMC was in several booths on the show floor.

Notebooks — and those of us who lug them around — continue to continue to benefit from shrinking components. You can expect to see full-featured one-inch-thick notebooks. In addition, many vendors — including Dell, IBM, and Toshiba — were showing customers notebook systems



Notebooks — and those who lug them around — continue to benefit from shrinking parts.

in which the form factor and feature sets were tailored to match the individual's computing need. Their goal is to create an entire mobile product line that addresses a variety of different users' applications such as e-mail, order taking, or personal management.

Speaking of management, one of the strong themes of the show was managed PCs. Scrambling everyone lined up in support for Intel's Wired for Management initiative — both on the floor and in the private suites. It is clear that Intel and PC manufacturers have finally adopted the religion of bringing down total cost of ownership and aren't just relying on cheaper NetPCs to solve this problem. We will continue to see managed PCs as a fad — until they become the standard. In fact, although Intel's less than \$1,000 "lean client" didn't make a Comdex debut, look for something from the company in 1998.

Managing PC assets was not just show-floor hype. Compaq, HP, IBM, Dell and many others were showing key customers and resellers

their plans for more manageable PCs in private suites.

Computer Associates took a lead and lined up nearly every manufacturer imaginable in support of its Unicenter TNG announce-

ment. There were two notable exceptions: IBM, while committed to managed PCs, declined the invitation because TNG is too similar to its Tivoli offering. And Gateway — maybe it sees its future in consumer computers and television replacements rather than managed corporate computers.

Additionally, there were many other surprises at the show. One of the strong draws was IBM's "human-computing" demonstration — no keyboards, no mice, and "it" can "see" you. Bill Gates, CEO of Microsoft, even stopped by this demonstration. You can find more information at <http://www.ibm.com/News/1997/11/i971119.htm>.

Another surprise last week was Borland's acquisition of Visigenics. But I need to cover that next week.

For those at Comdex, what did you see and like? Which of these indicators do you find most relevant? Send me your thoughts via e-mail.

Mark Tebbe is president of Lante Corp., a consulting and integration company in Chicago that serves clients worldwide, including several high-tech companies. Send e-mail to mttebbe@lante.com.



Looking for Cringely? Take one step back. End Around, page 123.



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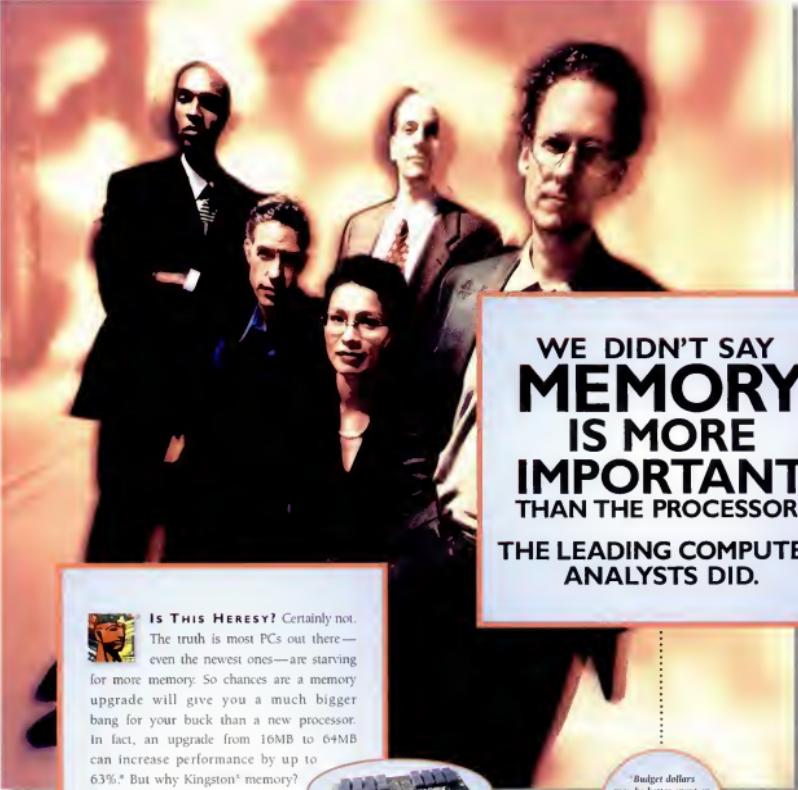
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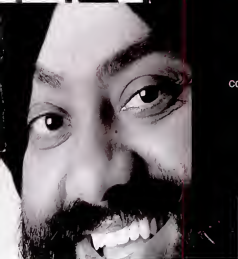
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Facing The Future

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Facing The Future

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